5-4310-275-14

TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL

COMPRESSOR, RECIPROCATING, G.E.D., 2 WHEEL MTD, PNEUMATIC TIRES, W/TOWBAR, LUNETTE EYE, 4 CFM, 3000 PSI (210.9000 KG PER SQ CM) (STEWART-WARNER MODEL 43040-301-01) NSN 4310-00-878-7969

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1975

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WARNING

SAFETY PRECAUTIONS
CAUTION

When operating unit on an asphalt surface, place a flat piece of sheet metal or asbestos material (approximately 6 inches square or larger) on the ground directly below the engine exhaust pipe outlet. This will deflect heat away from the asphalt and prevent a possible fire hazard.

BEFORE OPERATION

When handling fuel, always provide a metal-to-metal contact between the container and the tank. This will prevent a spark from being generated as fuel flows over the metallic surfaces.

Rules prohibiting smoking must be established and strictly enforced. Adequate NO SMOKING signs must be prominently posted.

Do not operate the compressor assembly in an enclosed building unless the exhaust gases are piped to the outside.

Exhaust gases contain carbon monoxide, which is a colorless, odorless, and poisonous gas.

DURING OPERATION

Rules prohibiting smoking must be established and strictly enforced.
Adequate NO SMOKING signs must be prominently posted.

CAUTION

High-pressure air can cause serious injury to operating personnel. Always make certain the connecting tube assemblies, hoses and other component parts of the compressor assembly are in good condition. In particular, never use an air hose assembly or filter attachments that are damaged or appear in questionable conditon.

CAUTION

Never charge an air storage bottle or other pneumatic equipment with compressed air if the proof pressure or rating of the equipment is unknown. Never charge equipment to a pressure in excess of its known rating.

CAUTION

Severe explosion will result if a container partially filled with oxygen is charged with air. If any doubt exists as to the contents of a container, thoroughly vent the container and flush with water or air at zero pressure before charging.

CAUTION

The pressure relief valve assemblies are pre-adjusted to open and relieve system air pressure when the pressure exceeds a safe value. Operating personnel should never attempt to change the setting of the pressure relief valve assemblies.

CAUTION

The oil-water-air emulsion which blows down when the push valve is pressed can cause painful injuries. Be extremely careful to stay clear of the blow down tube directly beneath the filter and separator assembly.

AFTER OPERATION

When handling fuel, always provide a metal-to-metal contact between the container and the tank. This will prevent a spark from being generated as fuel flows over the metallic surfaces.

Rules prohibiting smoking must be established and strictly enforced. Adequate NO SMOKING signs must be prominently posted. Clean all traces of gasoline from fuel tank prior to soldering or welding. Make sure the tank is completely filled with clean water to eliminate all fumes which may cause explosion. Failure to observe this precaution may result in an explosion.

WARNING

This compressor is NOT SUITABLE for the supply of air
for charging cylinders with BREATHABLE AIR.

WARNING

Operation of this equipment presents a NOISE HAZARD to personnel in the area. The noise level exceeds the allowable limits for unprotected personnel. Wear ear muffs or ear plugs which were fitted by a trained professional.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F. (38°C.)—138°F. (59°C.).

TECHNICAL MANUAL
No. 5-4310-275-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 17 June 1975

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL

COMPRESSOR, RECIPROCATING, G.E.D., 2 WHEEL MTD, PNEUMATIC TIRES, W/ TOWBAR, LUNETTE EYE, 4 CFM, 3000 PSI (210.9000 KG PER SQ CM) (STEWART-WARNER MODEL 43040-301-01)

NSN 4310-00-878-7969

			Paragraph	Page
CHAPTER	1.	INTRODUCTION		
Section	I.	General	1-1	1-1
	II.	Description and Tabulated Data	1-6	1-6
CHAPTER	2.	OPERATING INSTRUCTIONS		
Section	I.	Operating Procedure	2-1	2-1
	II.	Operation of Auxiliary Equipment	2-4	2-10
	III.	Operation Under Unusual Conditions	2-7	2-10
CHAPTER	3.	OPERATOR/CREW MAINTENANCE INSTRUCTIONS		
Section	I.	Lubrication Instructions	3-1	3-1
	II.	Preventive Maintenance Checks and Services	3-3	3-4
	III.	Troubleshooting	3-5	3-7
	IV.	Maintenance Procedures	3-7	3-7
CHAPTER	4.	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section	I.	Service Upon Receipt of Equipment	4-1	4-1
	II.	Movement to New Work Site	4-4	4-2
	III.	Repair Parts, Special Tools, and Equipment	4-6	4-2
	IV.	Preventive Maintenance Checks and Services	4-9	4-2
	V.	Troubleshooting	4-10	4-3
	VI.	Radio Interference Suppression	4-12	4-4
	VII.	Maintenance of Engine and Fuel System	4-17	4-5
	VIII.	Axles, Brakes, and Wheels	4-21	4-9
	IX.	Pneumatic Equipment	4-26	4-12
	X.	Body and Frame	4-35	4-20
CHAPTER	5.	DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS		
Section	I.	Repair Parts, Special Tools, and Equipment	5-1	5-1
	II.	Troubleshooting	5-4	5-1
	III.	General Maintenance	5-6	5-3
	IV.	Removal and Installation of Major Components and Assemblies	5-8	5-3
CHAPTER	6.	PNEUMATIC SYSTEM REPAIR INSTRUCTIONS		
Section	I.	Valve Assemblies	6-1	6-1
	II.	Filtering Assemblies	6-5	6-8

*This manual supersedes TM 5-4310-275-15, 29 July 1968, including all changes.

		Paragraph	Page
CHAPTER	7. AIR COMPRESSOR ASSEMBLY REPAIR		
Section	I. Compressor Components	7-1	7-1
	II. Air Compressor	7-5	7-3
APPENDIX	A. REFERENCES		A-1
	B. MAINTENANCE ALLOCATION CHART		B-1
	C. BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST		C-1

LIST OF ILLUSTRATIONS

Figure	Title	Page
1-1	Compressor Assembly, Right Front View	1-2
1-2	Compressor Assembly, Left Rear View with Shipping Dimensions	1-3
1-3	Compressor Assembly Components (Sheet 1 of 2)	1-4
1-3	Compressor Assembly Components (Sheet 2 of 2)	1-5
1-4	Pneumatic Schematic	1-10
1-5	Wiring Diagram	1-11
2-1	Controls and Instruments (Sheet 1 of 2)	2-2
2-1	Controls and Instruments (Sheet 2 of 2)	2-3
2-2	Starting the Compressor Assembly	2-5
2-3	Starting the Engine Assembly	2-6
2-4	Stopping the Compressor Assembly	2-8
2-5	Stopping the Engine Assembly	2-9
3-1	Lubrication Chart (Sheet 1 of 2)	3-2
3-1	Lubrication Chart (Sheet 2 of 2)	3-3
3-2	Dehydrator Assembly and Desiccant Chamber, Removal and Installation	3-5
3-3	Air Line Filter and Back Pressure Valve, Removal and Installation	3-6
3-4	Fuel System Service	3-8
3-5	Wheels, Tires and Tubes Service	3-9
3-6	Air Compressor Service	3-10
3-7	Air System Service	3-12
3-8	Air Line Filter Service	3-13
4-1	Fuel Tank, Removal and Installation	4-6
4-2	Exhaust Pipe, Removal and Installation	4-8
4-3	Tires, Wheels, Axle and Brake, Removal and Installation	4-10
4-4	Air Discharge Hose Assembly, Disassembly and Reassembly	4-12
4-5	Air Pressure Tank Safety Head Assembly and Pressure Relief Valve, Removal and Installation	4-13
4-6	Air Line Filter and Back Pressure Valve, Removal and Installation	4-13
4-7	Separator and Filter Assembly, Pressure Relief Valve, Check Valve, Back Pressure Valve, Removal and Installation	4-14
4-8	Instrument Panel Gages, Valves and Fittings, Removal and Installation	4-16
4-9	Air Lines and Fittings, Removal and Installation (Sheet 1 of 2)	4-18
4-9	Air Lines and Fittings, Removal and Installation (Sheet 2 of 2)	4-19
4-10	Towing Attachment and Support Stand, Removal and Installation	4-21
4-11	Housing Sections, Removal and Installation	4-23
5-1	Air Pressure Tank, Removal and Installation	5-5
5-2	Air Compressor, Removal and Installation	5-7
5-3	Engine Assembly, Removal and Installation	5-9
5-4	Engine Mounting Brackets, Removal and Installation	5-10
5-5	Support Stand Assembly, Disassembly and Reassembly	5-11
6-1	Pressure Relief Valve, Disassembly and Reassembly	6-2
6-2	Pressure Relief Valve Test Set-up	6-3
6-3	Check Valve, Disassembly and Reassembly	6-4
6-4	Check Valve, Test Set-Up	6-5
6-5	Back Pressure Valve, Disassembly and Reassembly	6-6
6-6	Back Pressure Valve, Test Set-Up	6-7
6-7	Dehydrator and Separator, Disassembly and Reassembly	6-9
6-8	Separator and Filter Assembly, Disassembly and Reassembly	6-11
6-9	Pneumatic Dump Valve Test Set-Up	6-13
7-1	Intercooler Assembly, Aftercooler Assembly and Fan Assembly, Removal and Installation	7-2
7-2	First Stage Cylinder and Piston, Removal and Installation	7-5
7-3	Second and Third Stage Cylinders and Pistons, Removal and Installation	7-7
7-4	Crankcase Assembly, Disassembly and Reassembly	7-11

LIST OF TABLES

Number	*Title*	*Page*
3-1	Operator/Crew Preventive Maintenance Checks and Services	3-6
3-2	Troubleshooting	3-7
4-1	Organizational Preventive Maintenance Checks and Services	4-3
4-2	Troubleshooting	4-3
5-1	Troubleshooting	5-1
5-2	Repair and Replacement Standards	5-3

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope

a. This manual contains instructions for the use of personnel maintaining the Compressor as allocated by the Maintenance Allocation Chart. It provides information on the operation, lubrication, preventive maintenance checks and services and maintenance of equipment, accessories, and components. See Figures 1-1, 1-2 and 1-3 for compressor assembly.

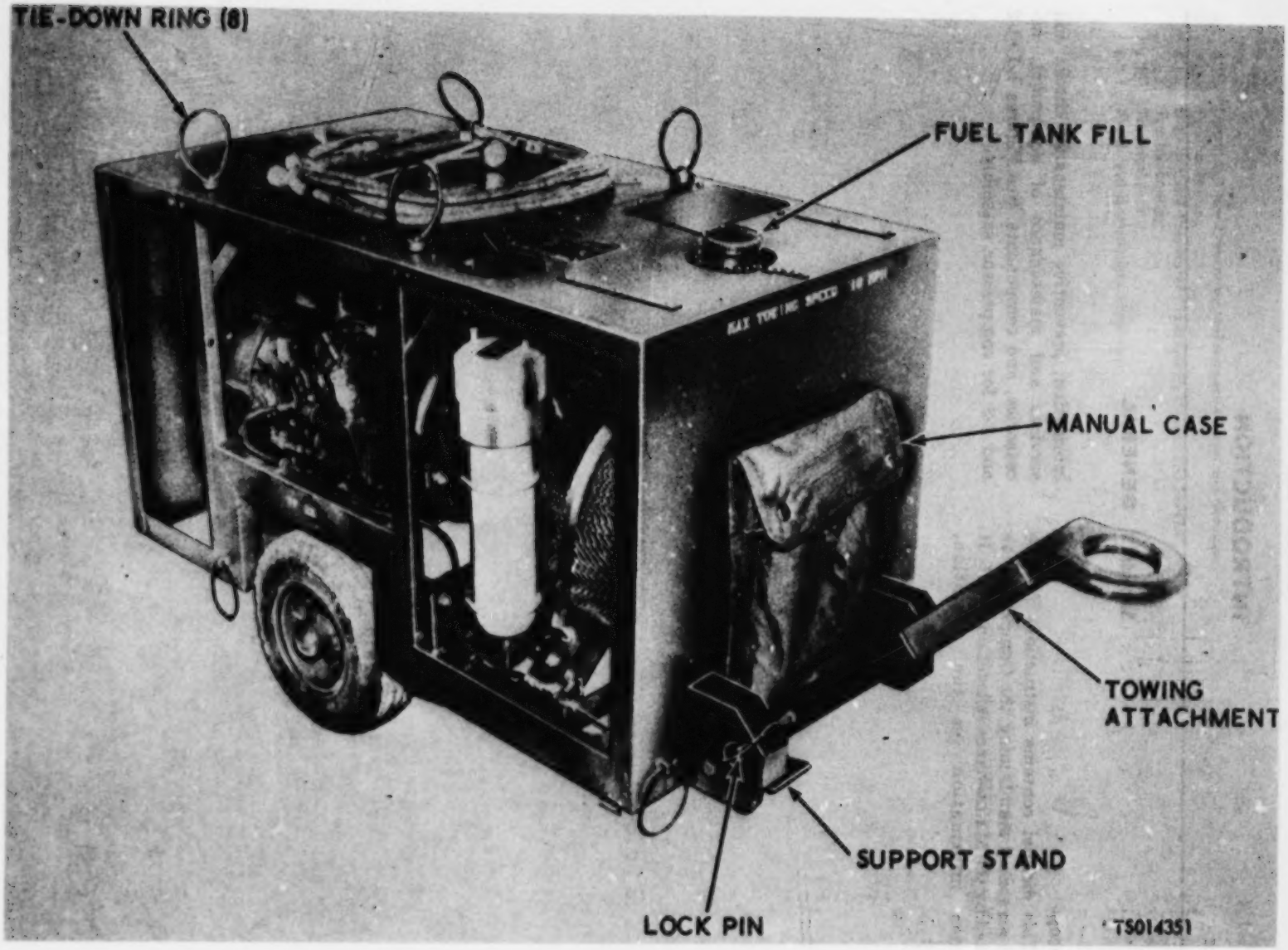


Figure 1-1. Compressor assembly, right front view.

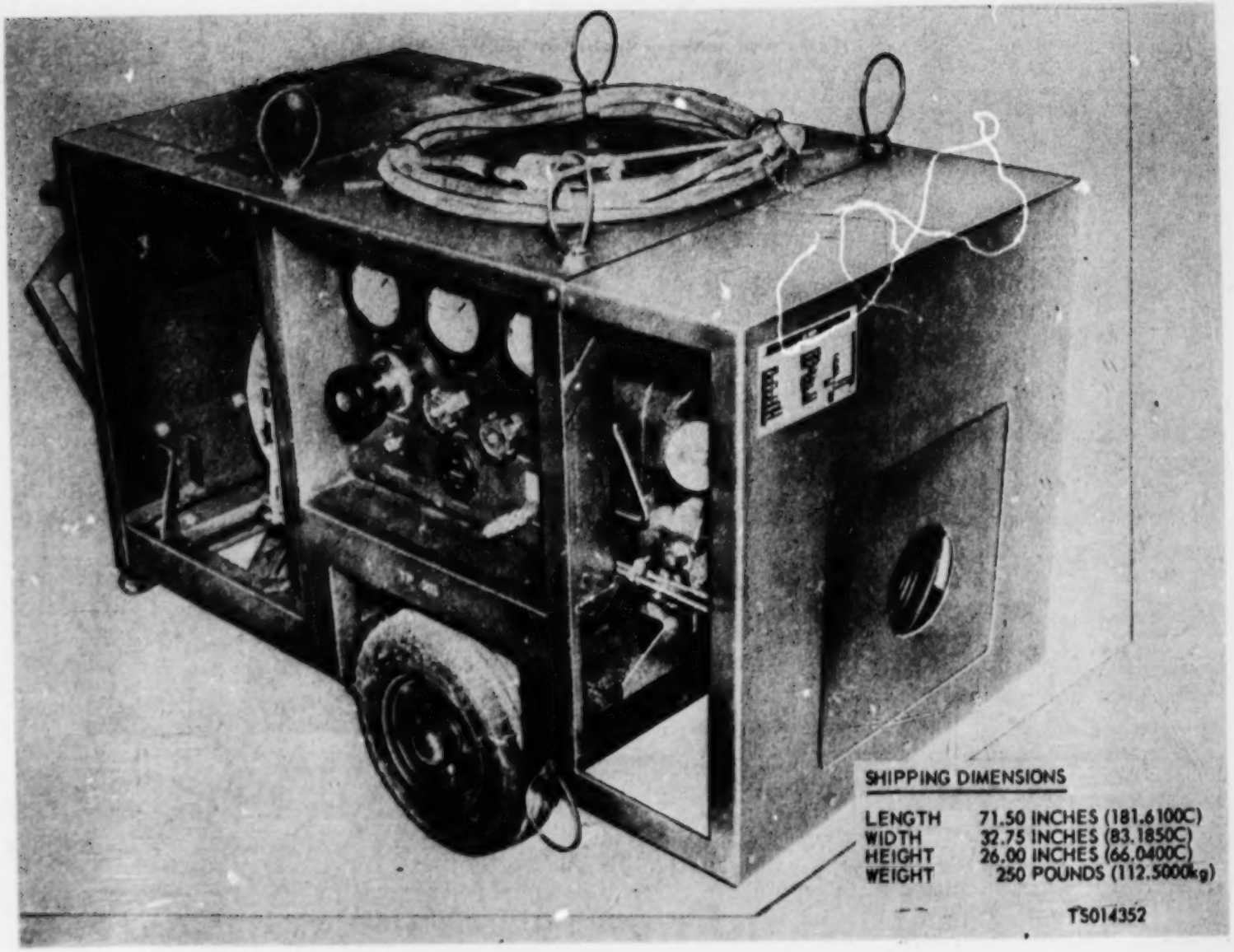


Figure 1-2. Compressor assembly, left rear view with shipping dimensions.

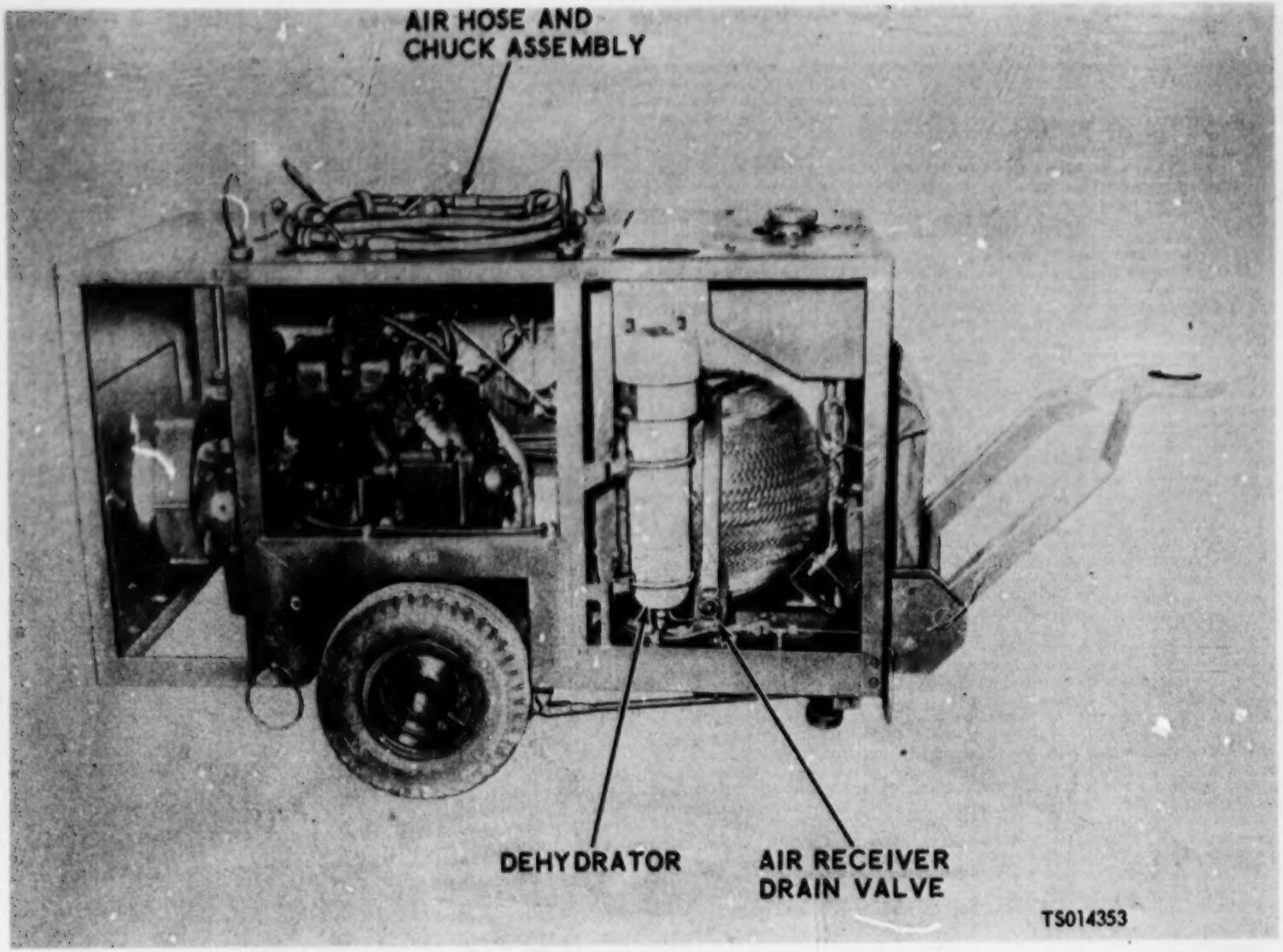


Figure 1-3. Compressor assembly components (sheet 1 of 2).

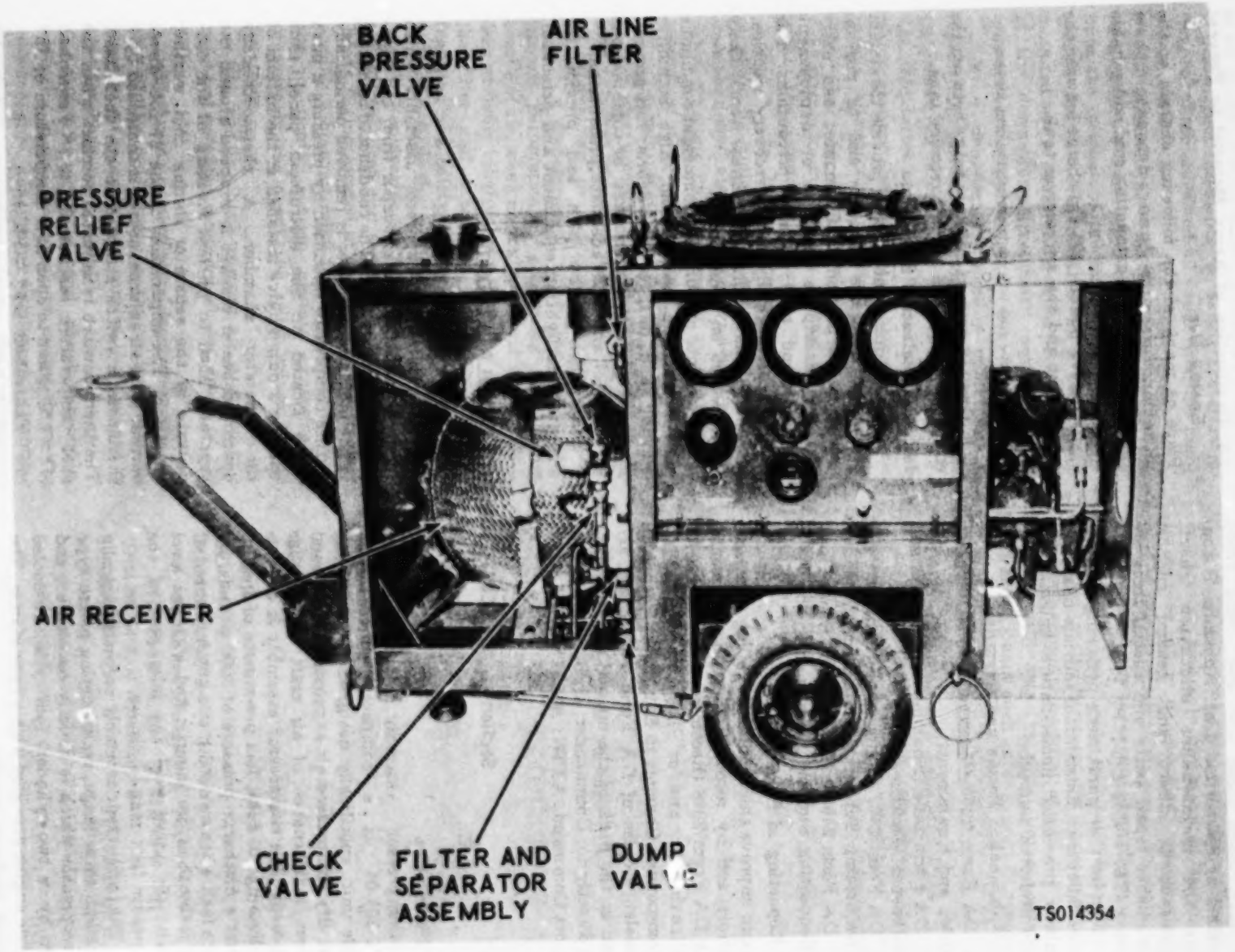


Figure 1-3. Compressor assembly components (sheet 2 of 2).

b. Appendix A contains a list of publications applicable to this manual. Appendix C contains the Basic Issue Items List and Items Troop Installed or Authorized List. Appendix B contains the maintenance allocation chart. Organizational, direct and general support maintenance repair parts and special tools are listed in TM 5-4310-275-25P.

c. Numbers in parenthesis following nomenclature callouts on illustrations indicate quantity; numbers preceding nomenclature callouts indicate preferred sequence.

1-2. Maintenance Forms and Records

a. DA Form 2258 (Depreservation Guide for Vehicles and Equipment).

b. DA Form 2404 (Equipment Inspection and Maintenance Worksheet).

c. DA Form 2407 (Maintenance Request Used for Requesting Support Maintenance).

d. DA Form 2407-1 (Continuation Sheet Used for Requesting Support Maintenance).

1-3. Reporting of Errors

You can improve this manual by calling attention to errors and by recommending improvements using DA Form 2028 (Recommended Changes to Publications), and/or DA Form 2028-2 (Recommended Changes to Equipment Technical Manuals). Copies of DA Form 2028-2 are attached in the back of the manual for your use. Mail directly to: Commander, U. S. Army Troop Support Command, ATTN: AMSTS-MPP, 4300 Goodfellow Blvd., St. Louis, Missouri 63120. A reply will be furnished directly to you.

1-4. Destruction of Army Materiel to Prevent Enemy Use

Place as many of the following charges as the situation permits and detonate them simultaneously with detonating cord and suitable detonator.

a. One 1/2-pound (.225 kg) charge between the compressor and the air receiver tank.

NOTE

The above step is a minimum requirement for this method.

b. One 1/2-pound (.225 kg) charge between the engine or motor and the air receiver tank.

1-5. Administrative Storage

a. Store equipment so as to provide maximum protection from the elements and to provide access for inspection, maintenance, and exercising. Anticipate removal or deployment problems and take suitable precautions. For example, strategically locate recovery vehicles, snowplows, slave units, and similar items, likely to be needed on short notice.

b. Take into account environmental conditions such as extreme heat or cold; high humidity; blowing sand, dust, or loose debris; soft ground; mud; heavy snow; earthquakes; or combinations here thereof and take adequate precautions.

c. Establish a fire plan and provide for adequate fire fighting equipment and personnel.

Section II. DESCRIPTION AND TABULATED DATA

1-6. Description

a. Compressor Assembly, Model Number 43040-301-01, is a compact, self-contained, mobile unit, specifically designed for supplying clean, dry compressed air as required for ground support maintenance of air craft and similar equipment. The compressor assembly is capable of delivering 4.0 cubic feet per minute of free air against a discharge pressure of 3000 pounds per square inch when operating at a nominal speed of 3550 revolutions per minute, and with sea level ambient air pressure at the inlet port of the compressor first stage cylinder.

b. The compressor assembly consists basically of a radial, three-stage, reciprocating piston type air compressor which is directly coupled to, and driven by, a two-cylinder, four-cycle, air-cooled gasoline engine provided with a rope starter. The complete package includes:

(1) A filter and separator assembly which removes moisture and oil vapor from the high-pressure discharge air. The condensate collecting in the moisture separator is removed periodically during compressor operation by pressing a push valve located on the instrument panel, thus opening a dump valve installed in the bottom of the separator chamber. A thermostatically controlled heater blanket is wrapped around the separator shell to prevent freezing of the condensate in the separator during cold weather operation. The application of the 27-volt direct current from an external source is controlled by a thermostatic switch attached to the shell base. The thermoswitch is adjusted to close when the shell temperature reaches 45° ± 7° Fahrenheit (7°±7°C.), and to open at a temperature of 75° ±5° Fahrenheit (24° ± 5°C.).

(2) A back pressure valve installed in the

filter and separator outlet port prevents the flow of air to the receiver until the separator chamber is pressurized sufficiently to assure the efficient removal of moisture and oil vapor from the high-pressure air.

(3) A check valve, installed in series with the back pressure valve, prevents reverse air flow from the receiver to the moisture separator. A system drain valve, installed in a tee fitting mounted on the check valve outlet port, allows air in the downstream pneumatic section to be relieved to atmosphere.

(4) A dehydrator assembly containing a replacement desiccant cartridge is installed in the pneumatic line downstream from the check valve. The dehydrator provides a further drying action which assures the delivery of high-pressure air having a minimum moisture content. A back pressure valve is installed in outlet port of dehydrator to maintain a steady air pressure within the pneumatic system.

(5) A line filter containing a replaceable micronic filter element is installed downstream from the dehydrator outlet port and back pressure valve. The line filter removes a minimum of 98 percent of all particles larger than 10 microns from the high-pressure air.

(6) Two pressure relief valves installed in the high-pressure pneumatic line open automatically to exhaust air to atmosphere if the pressure exceeds a predetermined value. The valves close (reseal) automatically, preventing the further escape of air, when normal pressures are restored. One pressure relief valve is installed in a port of the filter and separator; the other valve is mounted in a safety fitting located immediately upstream from the receiver.

(7) Replaceable rupture discs installed in the cap of the filter and separator assembly and a safety fitting located at the inlet to the receiver provide a blowout relief factor which safeguards the pneumatic system against excessive air pressure in the event the relief valves fail to function.

(8) The dry, high-pressure air is stored in a spherical receiver mounted at the front of the unit.

(9) An instrument panel located on the left side of the unit contains the various controls required to monitor and control the delivery of high-pressure air.

(10) An air hose and chuck assembly, normally stored on brackets mounted on the compressor assembly enclosure, enables pneumatic connection from the compressor assembly to the equipment to be charged.

(11) An engine fuel tank is located at the top front of the unit.

c. All component parts and assemblies of the compressor assembly are mounted on the rigid framework of a two-wheeled, pneumatic-tired cart. A three-section aluminum cover protects the equipment. A towbar mounted on the front of the cart enables the unit to be attached to all standard tow trucks. A retractable landing foot drops down to support the front end of the cart, and automatically sets the wheel brakes, when the unit is stationary such as for storage or operation.

d. Engine. Refer to TM 5-2805-257-14 for a description of the engine.

1-7. Identification and Tabulated Data

a. Identification. The compressor assembly has two major identification plates. The information contained on the plates is listed below.

(1) *Engine Plate.*

Nomenclature
Cu. in. displacement
Stock number
Serial
Mil. model
Manual
Date manufactured
Contract number
Contractor

(2) *Compressor Package Plate.*

Nomenclature
Model
Serial
Registration number
NSN
Engine serial number
Warranty
Date shipped
Contract number
Capacity
GVW
Date manufactured
Length
Height
Width
Cube
Manufactured by

b. Tabulated Data.

(1) *Compressor, Reciprocating, Power Driven, Wheel Mounted.*

Manufacturer	Stewart-Warner Corporation
Model number	43040-301-01
Overall dimensions (inches):	
Length (towbar up)	51.80 (131.5720 c)
Length (towbar extended; approx)	71.50 (181.6100 c)

Height	32.75 (83.1850 c)
Width	26.00 (66.0400 c)
Weight (dry)	250 lbs max (112.5000 kg)
Tire pressure	20 to 25 psig (1.4060) to (1.7575) kgs per sq cm)
Tire size	4.10 x 3.50, 6 ply

(2) *Basic Compressor Assembly.*

Manufacturer	Stewart-Warner Corporation
Type	Reciprocating piston
Number stages	Three
Operating speed (nominal)	3500 rpm
Discharge air pressure (rated)	3000 psig (210.9000 kg per sq cm)
Air pumping capacity (rated speed and discharge pressure; seal level inlet)	4.0 scfm
Second stage relief valve closing pressure (min)	100 psig (−7.0300 kg per sq cm)
Cooling	Air
Lubrication:	
Method	Pressure and mist
Lubricant	Specification MIL-L-6085A
Oil sump capacity (approx)	2 U.S. pints (0.9400 L)

(3) *Gasoline Engine and Engine Accessories.*

NOTE

Engine is Military Standard; refer to TM 5-2805-257-14.

(4) *Fuel Tank Assembly.*

Manufacturer	Stewart-Warner Corporation
Capacity	2.88 U.S. gals. (10.9440 L)

(5) *Filter and Separator Assembly.*

Manufacturer	Stewart-Warner Corporation
Filter element	
Rupture disc burst pressure	4500 to 5000 psig (316.3500) to (351.5000 kg per sq cm)
Heater blanket:	
Voltage	27 volts dc
Power	140 watts
Thermoswitch:	
Contacts open	75° ±5°F. (23.89) (−15.00°C.)
Contacts close	45° ±7°F. (7.22) (−13.89°C.)

(6) *Pneumatic Dump Valve Assembly.*

Manufacturer	Stewart-Warner Corporation
Type	Spring loaded, air actuated
Operating pressure:	
Low pressure	60 to 65 psig (4.2180) to (4.5695 kg per sq cm)
High pressure	3000 ± 50 psig (210.9000) (±3.5150 kg per sq cm)

(7) *Pressure Relief Valve Assembly.*

Manufacturer	Stewart-Warner Corporation
Number used	Two
Opening pressure	3400 ± 100 psig (239.0200) (±7.0300 kg per sq cm)
Reseal pressure (min)	3100 psig (217.9300 kg per sq cm)

(8) *Back Pressure Valve Assembly.*

Manufacturer	Stewart-Warner Corporation
Full flow inlet pressure (zero back pressure)	2650 +50, −100 psig (186.2950) (+3.5150) (−7.0300 kg per sq cm)
Full flow inlet pressure (2400 psig (168.7200 kg per sq cm) back pressure)	2450 psig max (172.2350 kg per sq cm)
Increasing pressure leakage (to 2000 psig) (154.6600 kg per sq cm)	5cc/min max
Decreasing pressure leakage (to 2000 psig) (154.6600 kg per sq cm)	0.15 scfm max

(9) *Check Valve Assembly.*

Manufacturer	Stewart-Warner Corporation
Opening pressure	2 to 8 psig (0.1406) to (0.5624 kg per sq cm)
Reverse flow leakage (3000 psi (210.9000 kg per sq cm) differential)	3cc/hr max
Reverse flow leakage (5 psi (0.3515 kg per sq cm) differential)	3cc/min max

(10) *Dehydrator Assembly.*

Manufacturer	Henry Spen and Co.
Desiccant material	Silica gel
Cartridge Life (min)	50 hours

(11) *Line Filter.*

Designation	MS28720-4
Type	Micronic line
Filter element	AN6235-1A
Particle removal	10 microns
Filter life (min)	100 hours

(12) *Air Receiver.*

Manufacturer	Walter Kidde and Co.
Rated pressure	3000 psig (210.9000 kg per sq cm)
Burst pressure	5500 psig (386.6500 kg per sq cm)
Capacity	1300 cu. in. (21307 cc)

(13) *Pressure Regulator.*

Manufacturer	Marotta Valve Corp.
Pressure range	0-3100

(14) *Push Valve.*

Manufacturer	Clippard Instrument Laboratory
Operating pressure	0 to 300 psig (21.0900 kg per sq cm)
Leakage	Zero

(15) *Air Hose and Chuck Assembly.*

High pressure air hose	MS28759E2400
Length	20 ft (6.0960 m)
Operating pressure	3300 psig (231.9900 kg per sq cm)
Pressure servicing valve:	
Manufacturer	Superior Valve and Fittings
Operating pressure	3300 psig (231.9900 kg per sq cm)

Hose extension:
Manufacturer ..... Parker-Hannifin
Chuck assembly:
Manufacturer ..... A. Schraders and Son

(16) *Nut and Bolt Torque Data.*

Size	*Foot-pounds*
1/4-20	6-8 (0.8298-1.1064 kgm)
5/16-18	11-13 (1.5213-1.7979 kgm)
3/8-16	20-22 2.7660-3.0426 kgm)
3/8-24	22-24 (3.0426-3.3192 kgm)
1/2-13	45-47 (6.2235-6.5001 kgm)
1/2-20	47-49 (6.5001-6.7767 kgm)
58-11	104-106 (14.3832-14.6598 kgm)
Compressor to engine bolts	125-150 (17.2875-20.7450 kgm)

(17) *Pneumatic Schematic* (*Figure 1-4*).

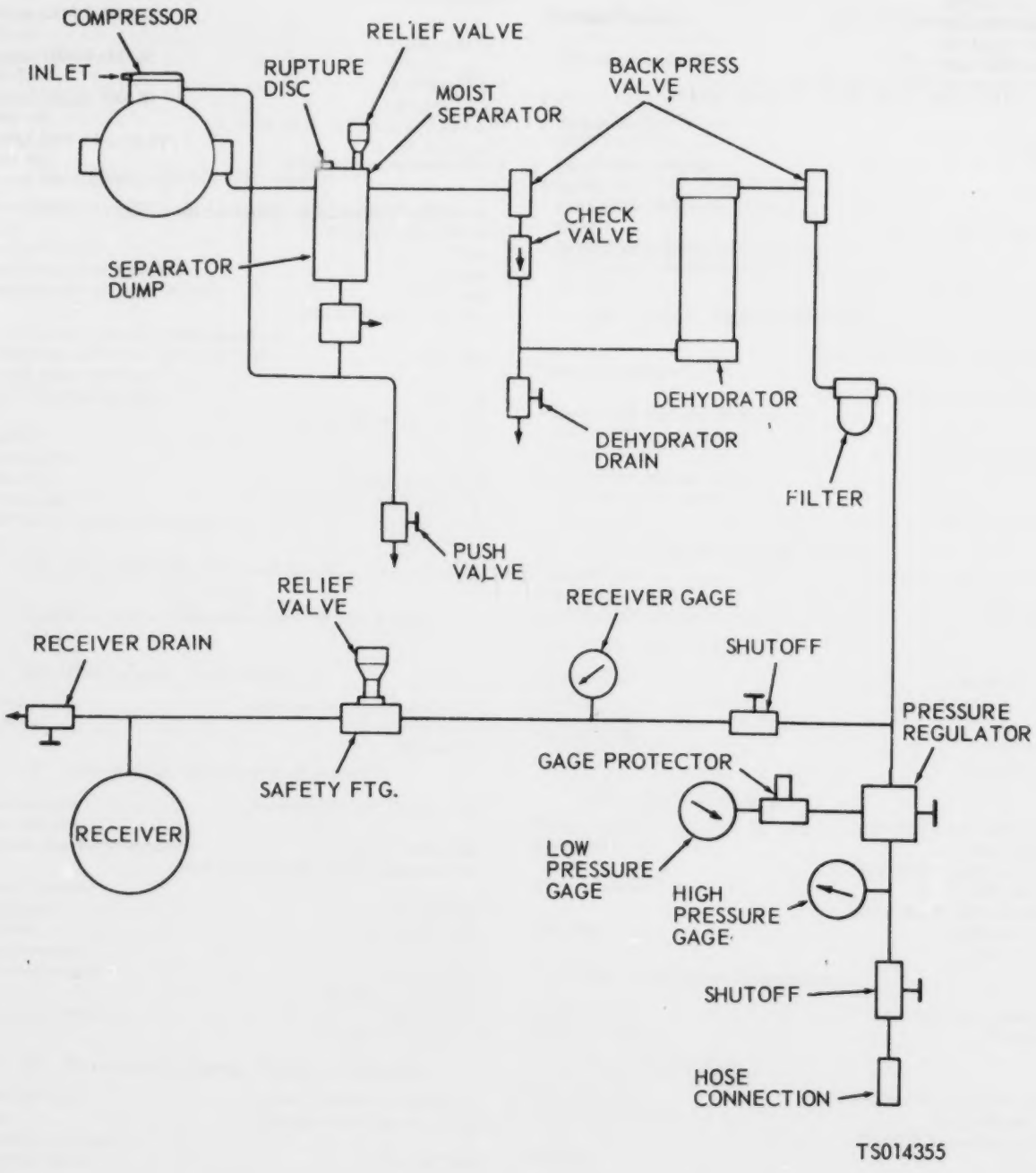


Figure 1-4. Pneumatic schematic.

(18) *Wiring Diagram (Figure 1-5).*

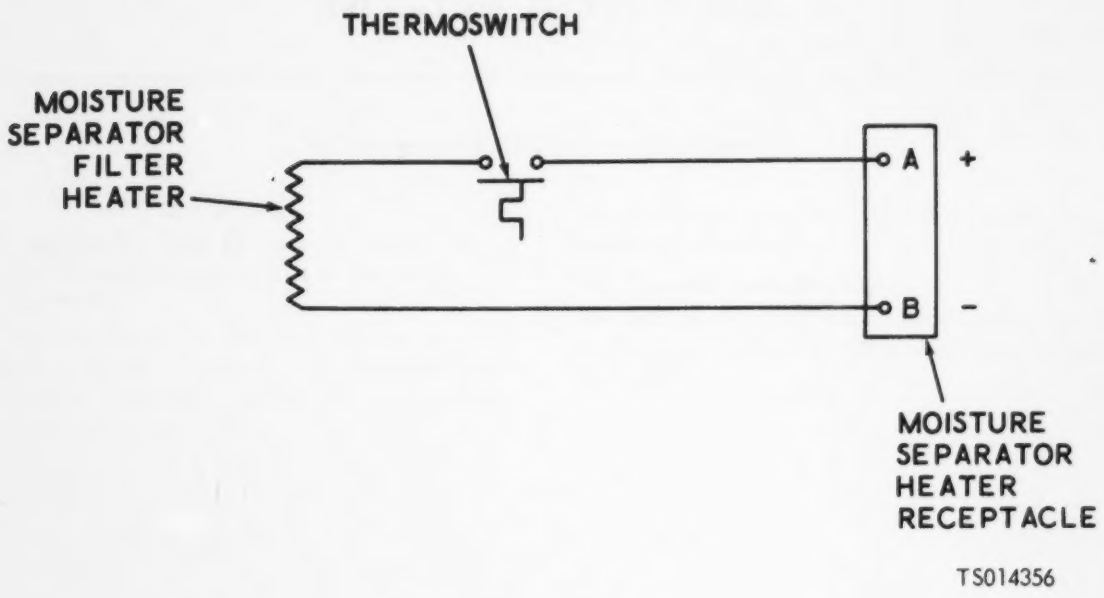


Figure 1-5. Wiring diagram.

1-8. Differences in Models

This manual covers only the Stewart-Warner Model 43040-301-01 compressor assembly. No known unit differences exist for the model covered by this manual.

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. OPERATING PROCEDURES

WARNING

If equipment fails to operate, refer to troubleshooting procedures in Chapter 3.

2-1. General

This section describes, locates, illustrates, and furnishes operator, crew, or organizational maintenance personnel sufficient information about various controls and instruments for the compressor assembly.

2-2. Controls and Instruments

The purpose of controls and instruments and their normal and maximum indications are illustrated in Figure 2-1.

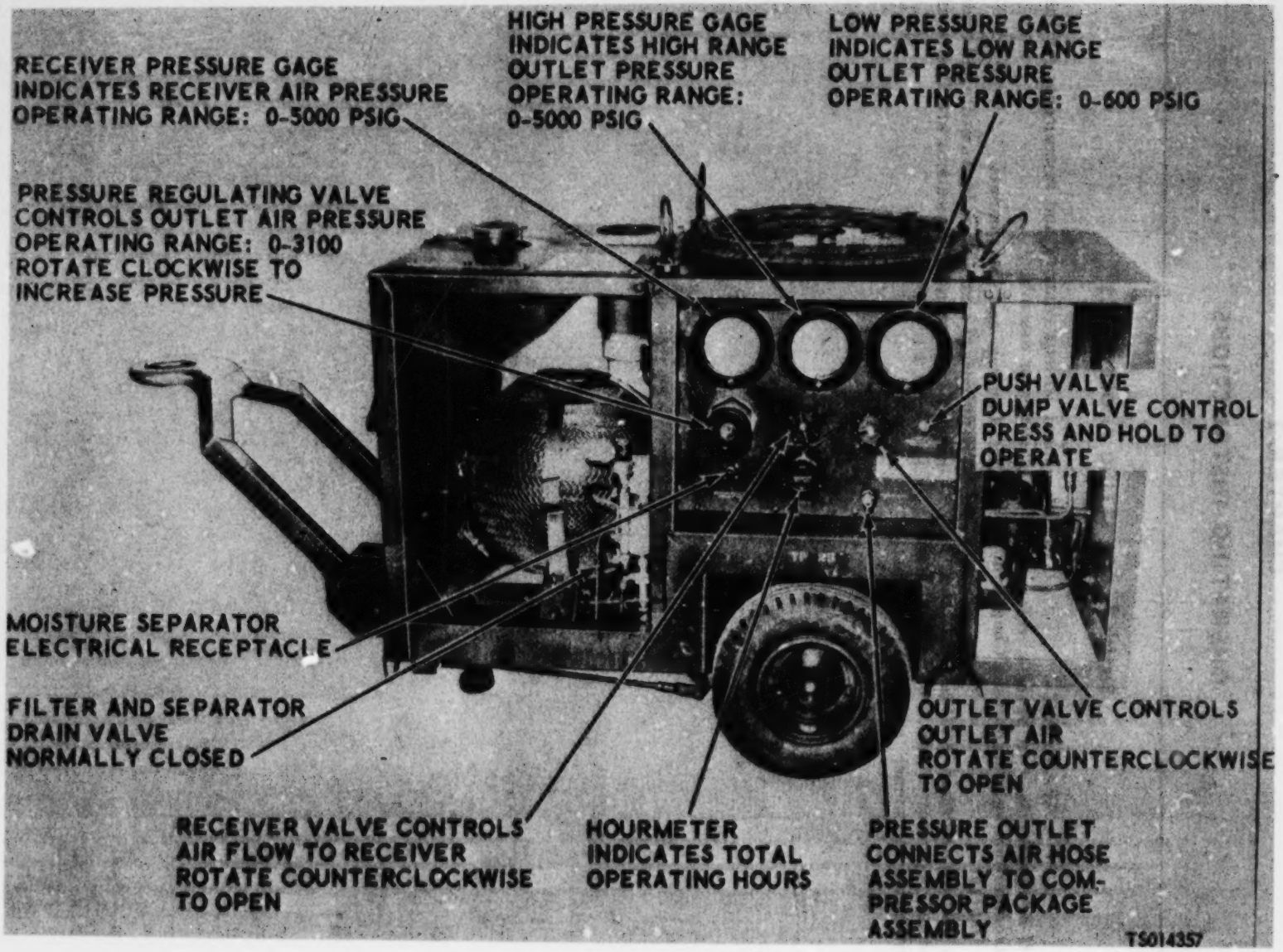


Figure 2-1. Controls and instruments (sheet 1 of 2).

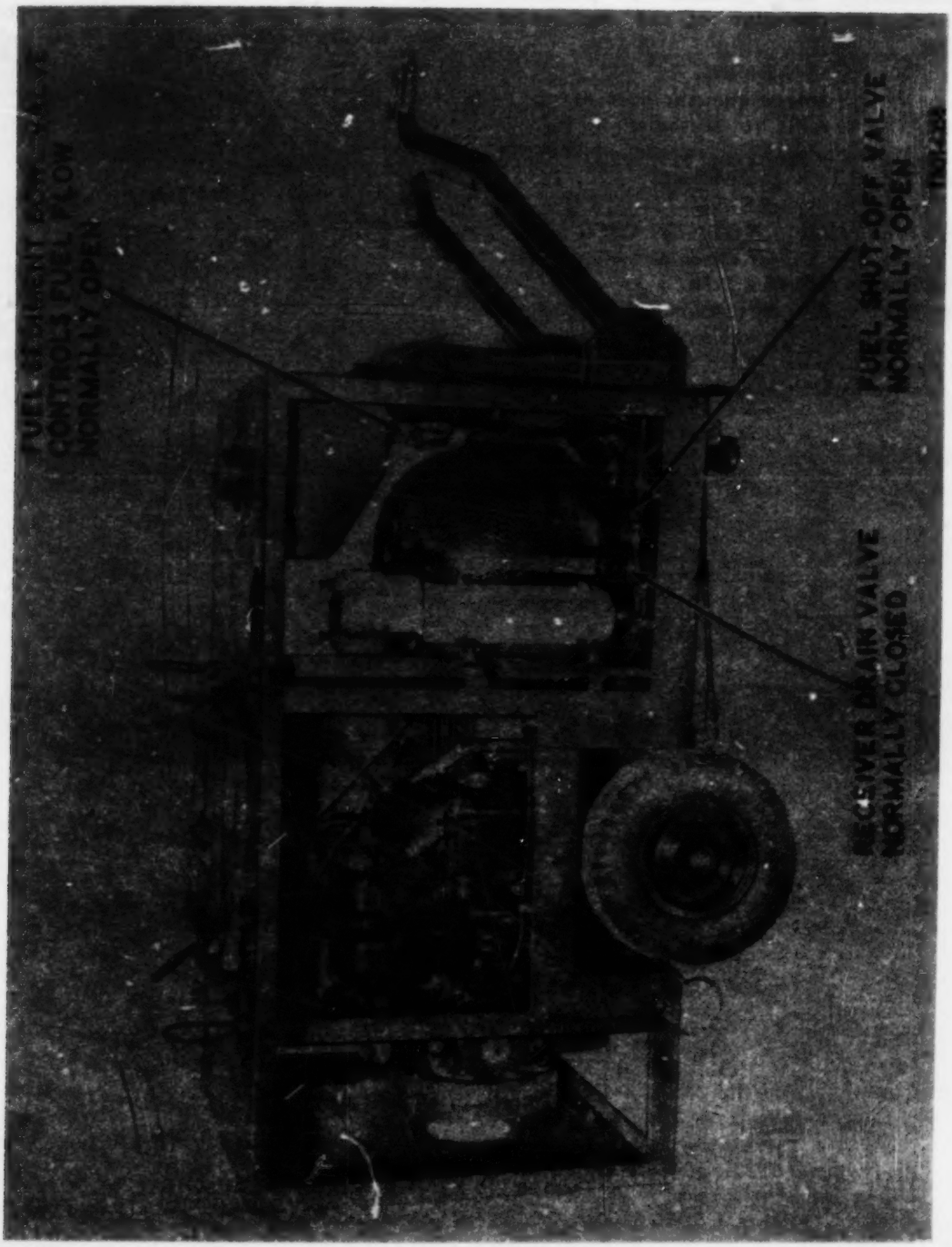


Figure 2-1. Controls and instruments (sheet 2 of 2).

2-3. Operation Under Normal Condition

a. General.

(1) Instructions in this section are published for information and guidance of personnel responsible for operation of the compressor assembly.

WARNING

Operation of this equipment presents a NOISE HAZARD to personnel in the area. Wear ear muffs or ear plugs which were fitted by a professional.

WARNING

This compressor is NOT SUITABLE for the supply of air for charging cylinders with BREATHABLE AIR.

(2) The operator must know how to perform every operation of which the compressor assembly is capable. This section gives instructions on starting and stopping the compressor assembly, basic motions of the compressor assembly, and on coordinating basic motions to perform specific tasks for which the equipment is designed. Since nearly every job presents a different problem, the operator may have to vary given procedures to fit the individual job.

b. Starting.

(1) *Preparation for Starting.*

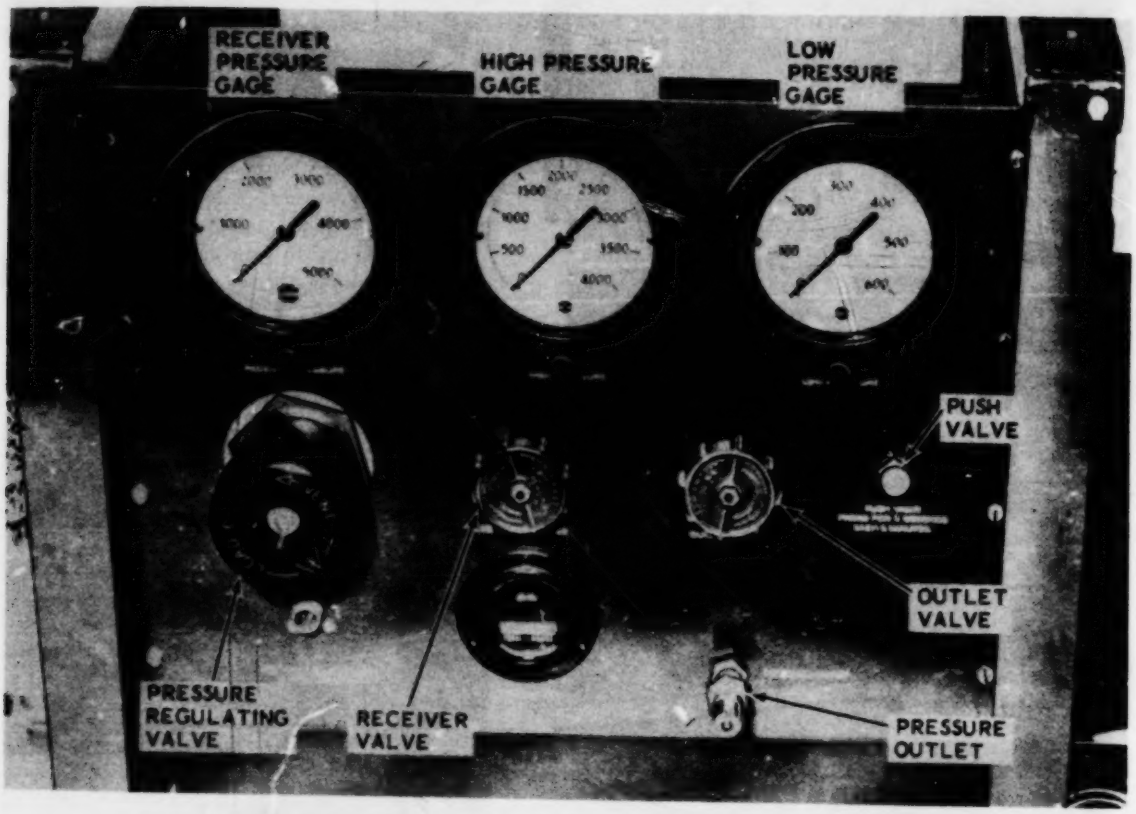
(a) Perform necessary daily preventive maintenance service.

(b) Refer to TM 5-2805-257-14 for engine prestarting instructions.

(2) *Starting.*

(a) Close the OUTLET VALVE, FILTER AND SEPARATOR DRAIN VALVE, and RECEIVER DRAIN VALVE (fig. 2-1).

(b) Refer to Figures 2-2 and 2-3 and start the compressor assembly.



STEP 1. OPEN THE RECEIVER VALVE (IF THE RECEIVER IS TO BE USED).

STEP 2. START THE ENGINE (SEE FIG. 2-3).

STEP 3. ALLOW THE COMPRESSOR TO OPERATE UNTIL THE RECEIVER PRESSURE GAGE INDICATES SUFFICIENT PRESSURE TO CHARGE THE EQUIPMENT (IF THE RECEIVER IS TO BE USED).

STEP 4. ADJUST THE PRESSURE REGULATING VALVE FOR REQUIRED DELIVERY PRESSURE. OBSERVE THE HIGH PRESSURE GAGE FOR PRESSURE EXCEEDING 600 PSIG.

STEP 5. CONNECT THE AIR HOSE AND CHUCK ASSEMBLY TO THE PRESSURE OUTLET AND THE EQUIPMENT TO BE CHARGED.

STEP 6. SLOWLY OPEN THE OUTLET VALVE.

STEP 7. PRESS AND HOLD THE PUSH VALVE FOR A PERIOD OF FIVE (5) SECONDS AT FIFTEEN (15) MINUTE INTERVALS WHILE OPERATING THE COMPRESSOR, TO ENSURE EFFECTIVE FILTERING ACTION.

TS014359

Figure 2-2. Starting the compressor assembly.

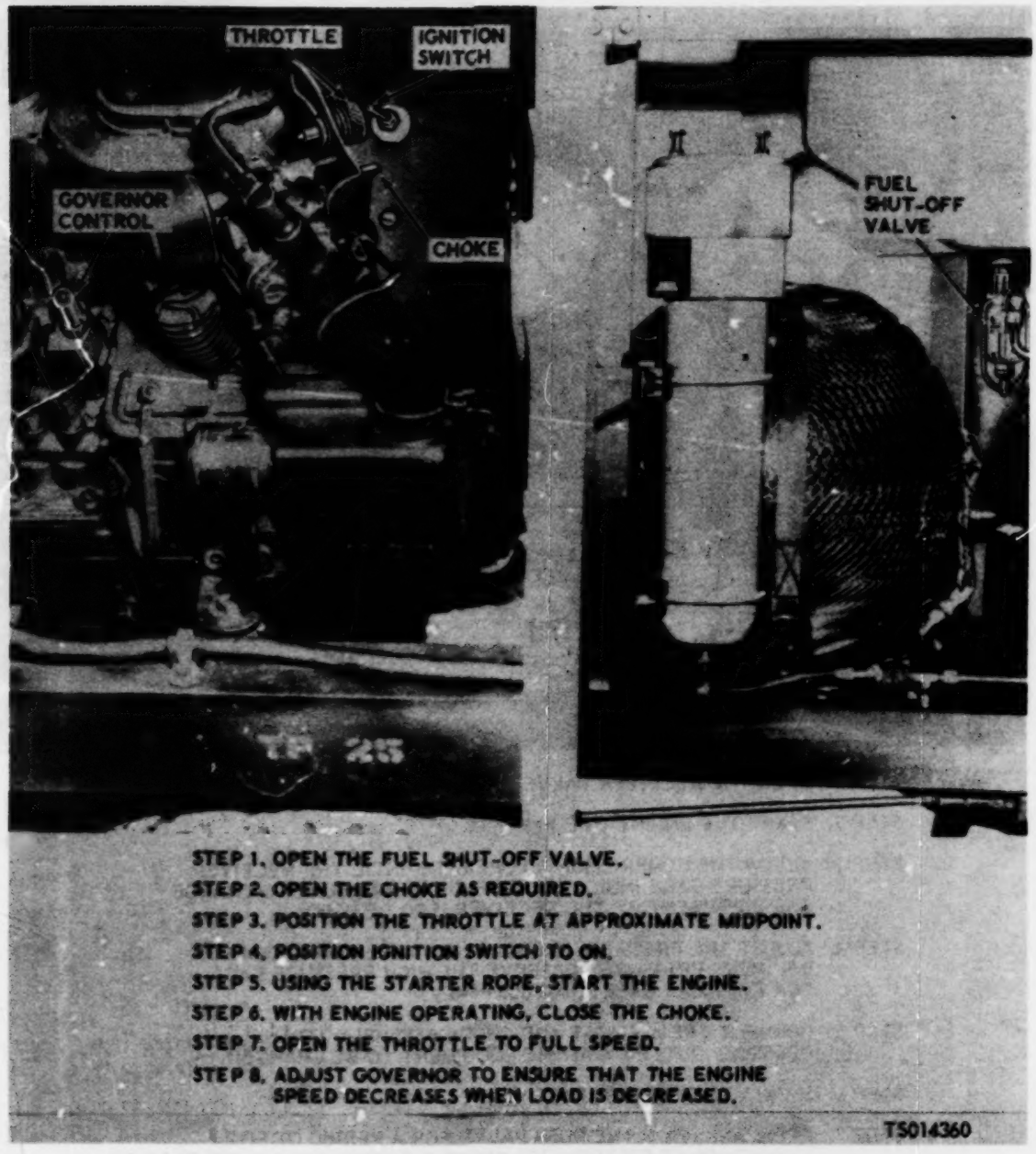

THROTTLE
IGNITION SWITCH
GOVERNOR CONTROL
CHOKE
FUEL SHUT-OFF VALVE
STEP 1. OPEN THE FUEL SHUT-OFF VALVE.
STEP 2. OPEN THE CHOKE AS REQUIRED.
STEP 3. POSITION THE THROTTLE AT APPROXIMATE MIDPOINT.
STEP 4. POSITION IGNITION SWITCH TO ON.
STEP 5. USING THE STARTER ROPE, START THE ENGINE.
STEP 6. WITH ENGINE OPERATING, CLOSE THE CHOKE.
STEP 7. OPEN THE THROTTLE TO FULL SPEED.
STEP 8. ADJUST GOVERNOR TO ENSURE THAT THE ENGINE SPEED DECREASES WHEN LOAD IS DECREASED.
TS014360

Figure 2-3. Starting the engine assembly.

CAUTION

Operate the assembly only in well-ventilated areas or with the engine exhaust gases vented outdoors. Engine exhaust gas contains lethal carbon monoxide which is colorless and odorless. When inhaled, carbon monoxide will cause serious, and sometimes fatal, illness.

CAUTION

High-pressure air can cause serious injury to operating personnel. Always make certain the connecting tube assemblies, hoses and other components parts of the compressor assembly are in good condition. In particular, never use an air hose assembly or filter attachments that are damaged or appear in questionable condition.

CAUTION

Never charge an air storage bottle or other pneumatic equipment with compressed air if the proof pressure or rating of the equipment is unknown. Never charge equipment to a pressure in excess of its known rating.

CAUTION

Severe explosion will result if a container partially filled with oxygen is charged with air. If any doubt exists as to the contents of a container, thoroughly vent the container and flush with water or air at zero pressure before charging.

CAUTION

The pressure relief valve assemblies are preadjusted to open and relieve system air pressure when the pressure exceeds a safe value. Operating personnel should never attempt to change the setting of the pressure relief valve assemblies.

CAUTION

The oil-water-air emulsion which blows down when the push valve is pressed can cause painful injuries. Be extremely careful to stay clear of the blow down tube directly beneath the filter and separator assembly.

c. Stopping. Refer to Figures 2-4 and 2-5 and stop the compressor assembly.

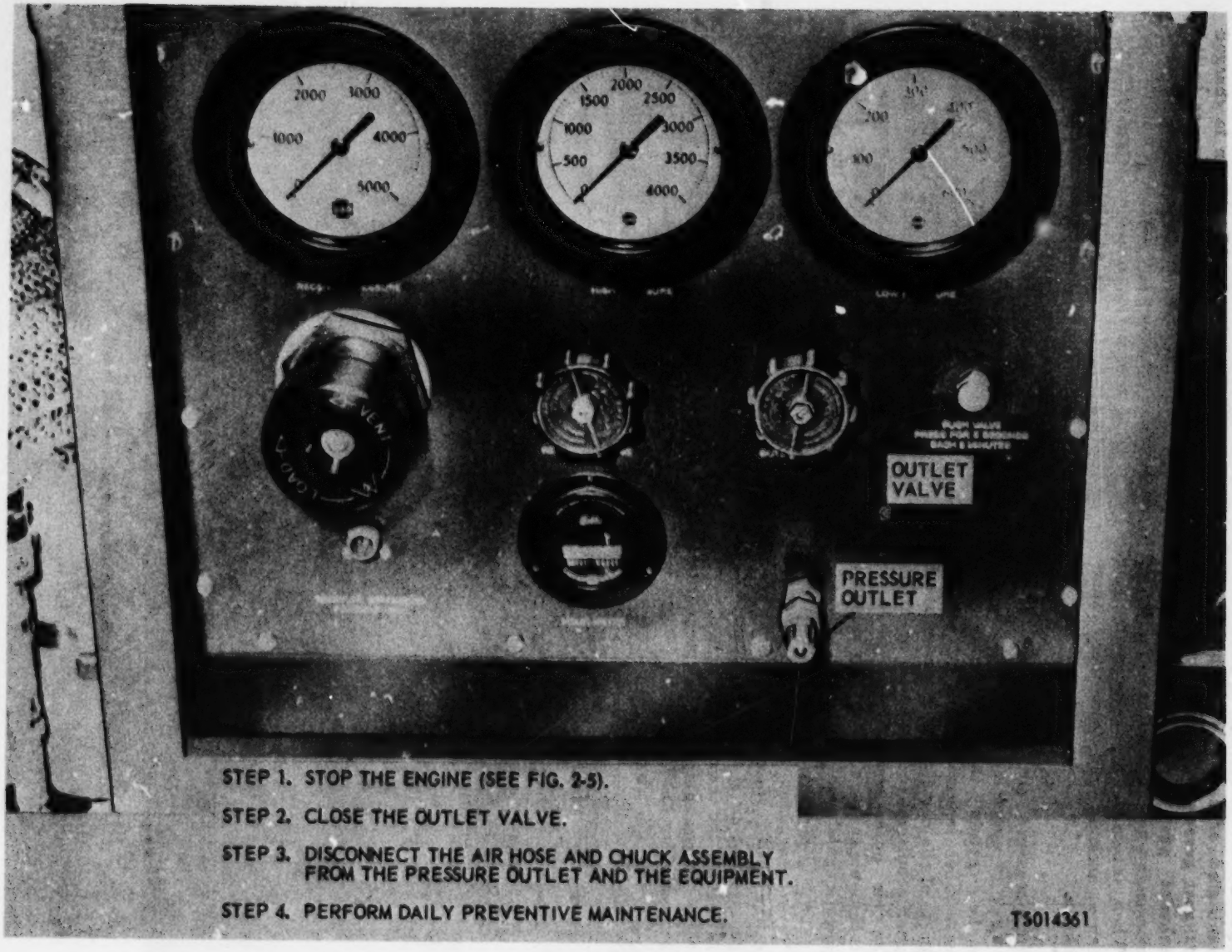

OUTLET VALVE
PRESSURE OUTLET
STEP 1. STOP THE ENGINE (SEE FIG. 2-5).
STEP 2. CLOSE THE OUTLET VALVE.
STEP 3. DISCONNECT THE AIR HOSE AND CHUCK ASSEMBLY FROM THE PRESSURE OUTLET AND THE EQUIPMENT.
STEP 4. PERFORM DAILY PREVENTIVE MAINTENANCE.
TS014361

Figure 2-4. Stopping the compressor assembly.

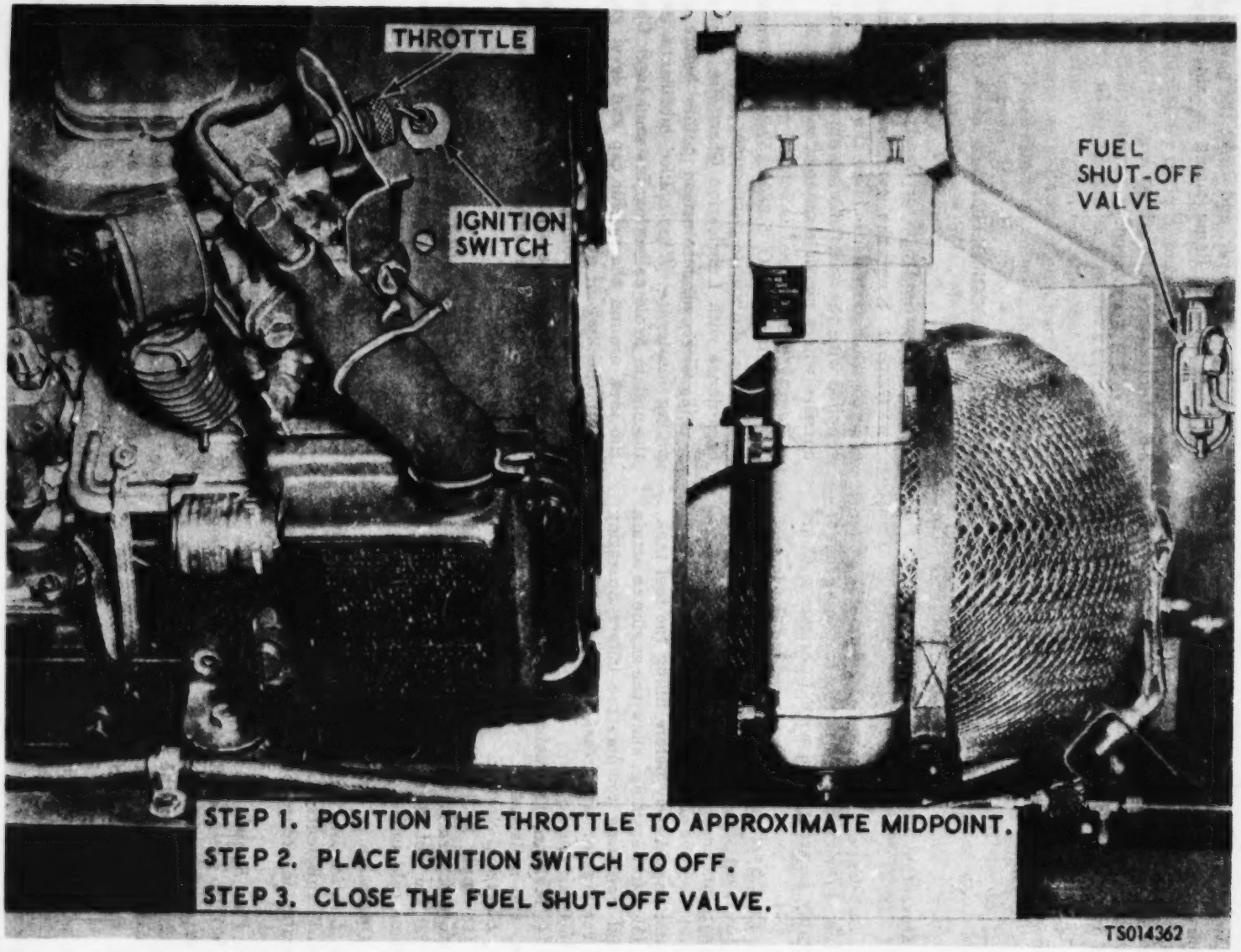

THROTTLE
IGNITION SWITCH
FUEL SHUT-OFF VALVE
STEP 1. POSITION THE THROTTLE TO APPROXIMATE MIDPOINT.
STEP 2. PLACE IGNITION SWITCH TO OFF.
STEP 3. CLOSE THE FUEL SHUT-OFF VALVE.
TS014362

Figure 2-5. Stopping the engine assembly.

Section II. OPERATION OF AUXILIARY EQUIPMENT

2-4. General

The dry chemical type fire extinguisher is suitable for use on all types of fire and is effective in areas where ambient temperature is 25 °F. (−4 °C.) and above. If winterized, the fire extinguisher may be used in temperatures below −25 °F. (−37 °C.).

2-5. Operation

Remove the fire extinguisher from its location, lift the handle, press lever, and direct the powder a the base of the flame using a side-to-sid sweeping motion.

2-6. Maintenance

Refer to TB 5-4200-200-10.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

2-7. Operation in Extreme Cold (Below 0° F.) (−18° C.)

a. Lubrication. Refer to LO 5-2805-257-14 for engine lubrication. Lubricate compressor assembly in accordance with Lubrication Chart (fig. 3-1).

b. Fuel System.

(1) Keep the fuel tank full at all times to prevent condensation.

(2) Remove all ice crystals from the fuel tank strainer immediately before filling the fuel tank.

(3) After starting, allow the engine to attain normal operating temperature before operating the compressor at pressures above 500 psig (35.1500 kg per sq cm).

(4) Maintain the fuel tank cap free from ice, snow, and moisture.

c. Electrical System.

(1) Apply 27.0 volts direct current to the moisture separator receptacle (fig. 2-1).

(2) Do not disturb the electrical leads in extreme cold unless repair is required.

2-8. Operation in Extreme Heat

a. Lubrication. Refer to LO 5-2805-257-14 for engine lubrication. Lubricate compressor assembly in accordance with Lubrication Chart (fig. 3-1).

b. Fuel System.

(1) Do not overfill the fuel tank; allow room for expansion of fuel.

(2) Make sure the fuel tank cap is on tight and that the cap vent is open.

c. Engine Cooling Fins and Air Shrouds.

(1) Check the air shrouds for loss or damage that would prevent circulation of cooling air.

(2) Check the cooling fins on the cylinders frequently to make sure they are clean and not damaged.

2-9. Operation in Dusty or Sandy Areas

a. General. Keep the compressor assembly covered when not in use. Use the canvas cove supplied with the unit; take advantage of natura barriers where possible or erect a shelter.

b. Lubrication.

(1) Refer to LO 5-2805-257-14 for engin lubrication. Lubricate compressor and trailer i accordance with Lubrication Chart (fig. 3-1).

(2) Clean all lubrication points before ap plying lubricants. Wipe spilled lubricants fron the unit to avoid collecting dust and sand. Clea the area around the oil fill cap and level gag before checking or adding lubricants.

(3) Clean the cooling fins so they are free o any spilled lubricants to prevent collection of dirt

(4) Clean the crankcase oil fill and breathe cap frequently.

c. Fuel Systems.

(1) Use care when adding fuel to preven sand and dirt from entering the fuel system. Kee the fuel tank cap tight at all times.

(2) Store fuel in clean, dry containers an protect them from sand and dust.

(3) Service the air cleaner and fuel filter dail (refer to engine manual, TM 5-2805-257-14).

(4) Wipe down the unit frequently to preven accumulation of sand and dust.

d. Electrical System.

(1) Wipe wiring and magneto with clean, dr cloth.

(2) Check all gages for loose or broken lense which might permit entry of dust and sand Repair or tape the lenses to prevent entry o foreign matter.

e. Engine Cooling Fins and Air Shrouds. Clea the engine cooling fins frequently to preven accumulation of dust and sand.

2-10. Operation Under Rainy or Humid Conditions

a. General. When the compressor assembly is operated outdoors, erect a suitable shelter or cover the unit with the canvas cover when not in use. During dry periods, remove the canvas cover to allow the unit to dry out.

b. Lubrication.

(1) Refer to LO 5-2805-257-14 for engine lubrication. Lubricate compressor assembly in accordance with Lubrication Chart (fig. 3-1).

(2) Keep rain from entering the system when lubricating the unit.

(3) Keep the crankcase oil fill, breather cap, and the level gage tight at all times.

c. Fuel System.

(1) Keep the fuel tank full at all times to prevent condensation.

(2) Keep the fuel tank cap tight at all times.

(3) Service the fuel filter daily.

d. Electrical Systems.

(1) Keep electrical leads, spark plugs, and magneto wiped dry.

(2) Check electrical leads for cracked or frayed insulation.

(3) Check all gages for loose or broken lenses which might permit entry of moisture. Repair or tape the lenses to prevent entry of moisture.

(4) Reduce the intervals between condensate blow downs as necessary to assure the delivery of dry, pure air.

2-11. Operation in Salt Water Areas

a. General. Salt water causes corrosive action on metal. Wash the unit frequently with fresh, clean water.

b. Lubrication.

(1) Steam clean the entire unit, if such equipment is available, before lubricating.

(2) Clean and dry all fittings before lubricating.

(3) Refer to LO 5-2805-257-14 for engine lubrication. Lubricate compressor assembly in accordance with Lubrication Chart (fig. 3-1).

c. Fuel Systems.

(1) Keep the fuel tank cap tight at all times.

(2) Service the fuel filter daily.

(3) Store the fuel in clean, dry containers.

d. Electrical System.

(1) Clean and dry all electrical connections and check for corrosion.

(2) Check all gages for loose or broken lenses which might permit entry of moisture. Repair or tape the lenses to prevent entry of moisture.

CHAPTER 3

OPERATOR / CREW MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. General Lubrication Information

a. This section contains a reproduction of the lubrication order and lubrication instructions which are supplemental to, and not specifically covered in the lubrication order.

b. The lubrication order shown in Figure 3-1 is an exact reproduction of the approved lubrication order for the compressor assembly. For the current lubrication order, refer to DA PAM310-4. Refer to LO 5-2805-257-14 for engine lubrication.

LUBRICATION CHART

COMPRESSOR, RECIPROCATING, G.E.D., 2 WHEEL MTD. PNEUMATIC TIRES, W/TOWBAR, LUNETTE EYE, 4CFM, 3000 PSI (STEWART-WARNER MODEL 43040-301-01)

REFERENCE: LO5-2805-257-14 AND C9100-1L

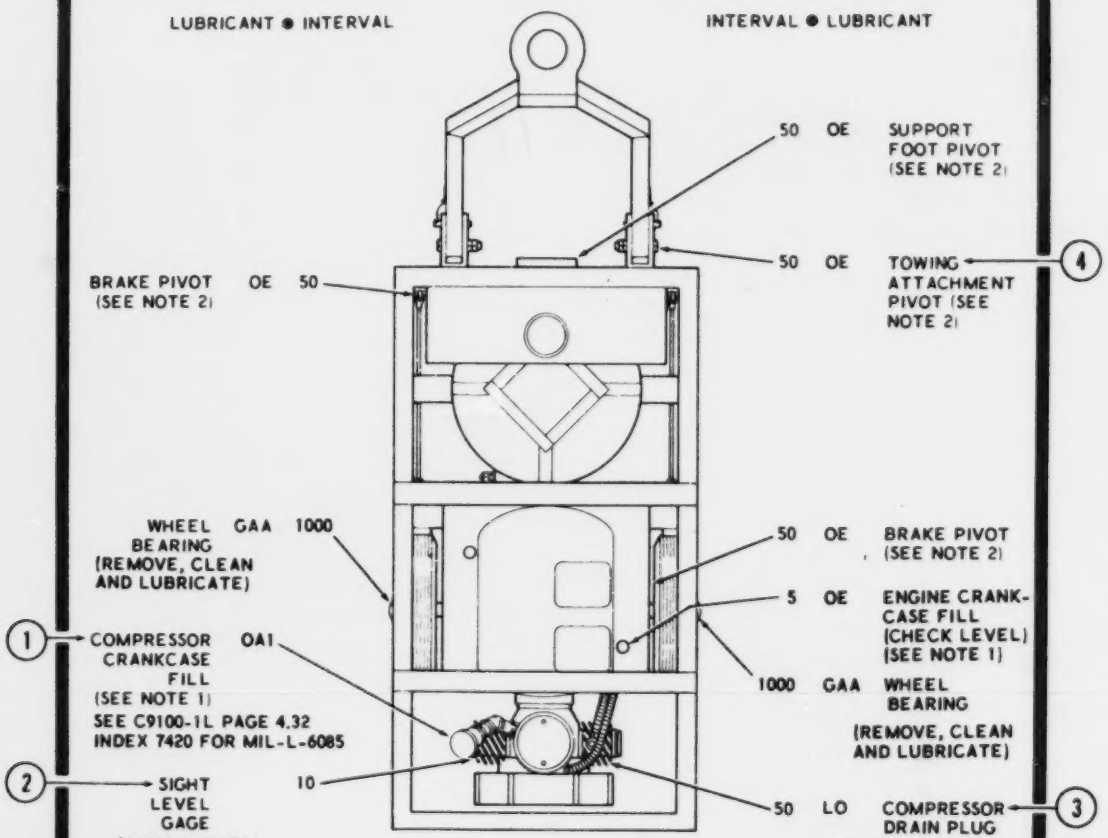
Intervals are based on normal operation. Adjust to compensate for abnormal operations and severe conditions. During inactive periods sufficient lubrication must be performed for adequate preservation.

Clean fittings before lubricating.

Relubricate after washing or fording.

Clean parts with SOLVENT, dry-cleaning, or with OIL, fuel, Diesel, before lubricating.

Drain crankcase when hot; replenish and check level.


LUBRICANT ● INTERVAL
INTERVAL ● LUBRICANT
50 OE SUPPORT FOOT PIVOT (SEE NOTE 2)
50 OE TOWING ATTACHMENT PIVOT (SEE NOTE 2)
4
BRAKE PIVOT OE 50 (SEE NOTE 2)
WHEEL BEARING GAA 1000 (REMOVE, CLEAN AND LUBRICATE)
50 OE BRAKE PIVOT (SEE NOTE 2)
5 OE ENGINE CRANKCASE FILL (CHECK LEVEL) (SEE NOTE 1)
1000 GAA WHEEL BEARING (REMOVE, CLEAN AND LUBRICATE)
1
COMPRESSOR CRANKCASE FILL OA1 (SEE NOTE 1)
SEE C9100-1L PAGE 4.32 INDEX 7420 FOR MIL-L-6085
2
SIGHT LEVEL GAGE 10 (CHECK LEVEL)
50 LO COMPRESSOR DRAIN PLUG (DRAIN AND REFILL)
3

CONTINUED ON FOLLOWING PAGE

TS014363

Figure 3-1. Lubrication chart (sheet 1 of 2).

KEY

	LUBRICANTS	CAPACITY	ALL TEMPERATURES	INTERVALS
OA1	LUBRICATING OIL, aircraft instrument	2 pints	MIL-L-6085	Intervals given are in hours of normal operation.
	COMPRESSOR CRANKCASE			
GAA	GREASE, Automotive and artillery			
OE	LUBRICATING OIL, Internal combustion engine		OE	
	Oil Can Points			

NOTES:

1. Wash breather cover and filter assembly in dry-cleaning solvent (Federal Specification P-D-680) each oil change.
2. OIL CAN POINTS. Every 100 hours and lubricate the control linkages, and all exposed adjusting threads with OE.
3. LUBRICANTS. The following is a list of lubricants with the military symbols and the applicable specification numbers:
   OE-MIL-L-2104,
   OA1-MIL-L-6085, and
   GAA-MIL-G-10924.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory.

BY ORDER OF THE SECRETARY
OF THE ARMY:

HAROLD K. JOHNSON
General, United States
Chief of Staff

OFFICIAL:

KENNETH G. WICKHAM,
Major General, United States Army
The Adjutant General

TS014364

Figure 3-1. Lubrication chart (sheet 2 of 2).

3-2. Detailed Lubrication Information

a. General. Keep all lubricants in closed containers and store in a clean, dry place away from external heat. Allow no dust, dirt, or other foreign material to mix with the lubricants. Keep all lubrication equipment clean and ready for use.

WARNING

Cleaning solvent, Fed. Spec. P-D-680, used for cleaning is POTENTIALLY DANGEROUS CHEMICAL. Do not use near open flame. Flash point of solvent is 100° — 138° F. (38° — 59° C.).

b. Cleaning. Keep all external parts not requiring lubrication clean of lubricants. Before lubricating the equipment, wipe all lubrication points free of dust and grease. After lubrication, wipe all lubrication points clean to prevent accumulation of foreign matter.

c. Points of Lubrication. Service the lubrication points at proper intervals as illustrated in Figure 3-1.

NOTE

Refer to TM 5-2805-257-14 for engine lubrication points and related information.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

3-3. General

a. To insure that the compressor assembly is ready for operation at all times, it must be inspected systematically so that the defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance services to be performed are listed in Table 3-1. Item numbers indicate the sequence of minimum inspection requirements. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed which would damage the equipment if operation were continued. All deficiencies and shortcomings will be recorded together with the corrective action taken on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) at the earliest possible opportunity.

b. Maintenance services to be performed at intervals other than daily or quarterly are as follows:

(1) Replace the dehydrator filter at intervals of 50 hours. Refer to Figure 3-2 (paragraph 3-10).

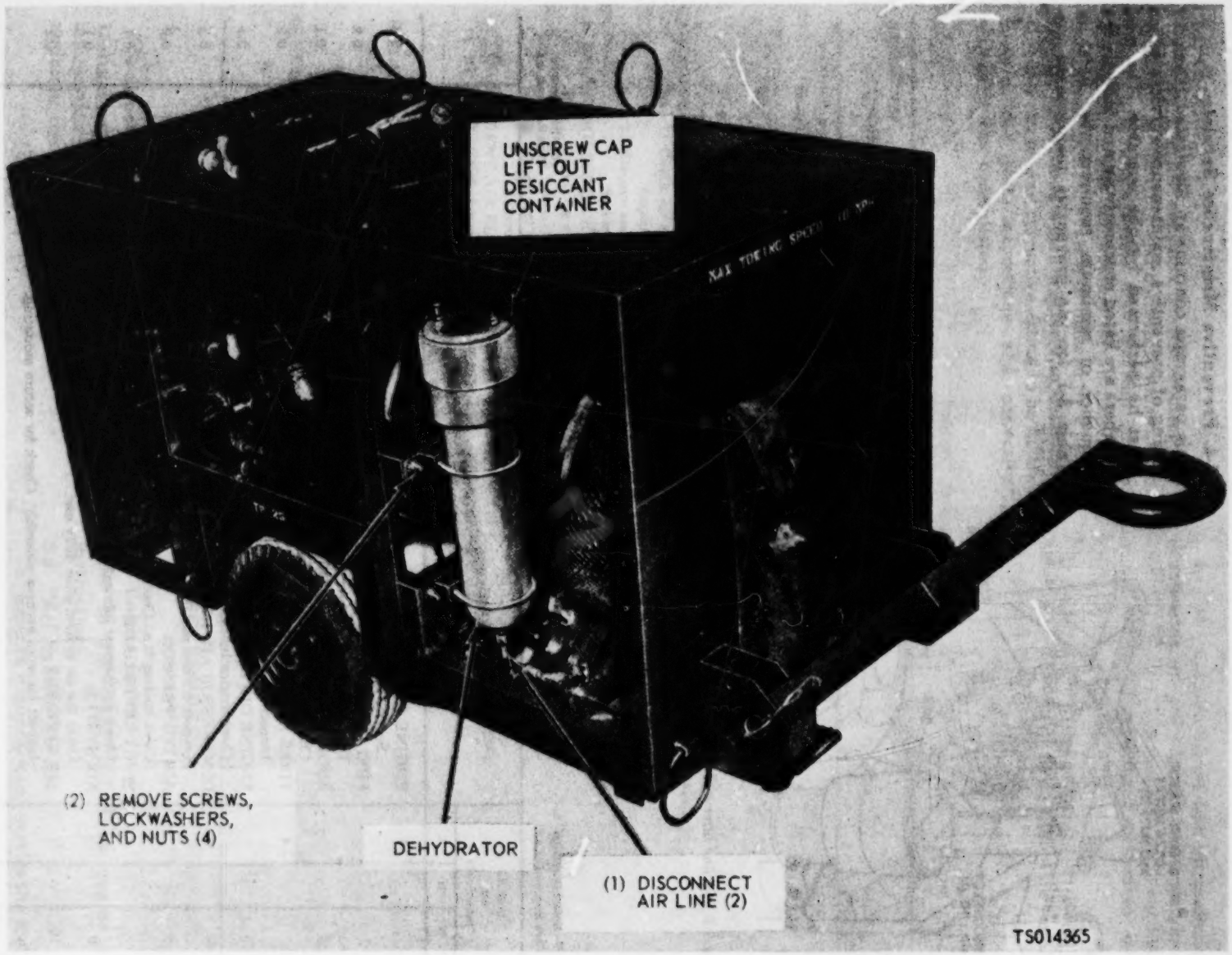


Figure 3-2. Dehydrator assembly and desiccant chamber, removal and installation.

(2) Service or replace the air line filter at 100 hour intervals. Refer to Figure 3-3.

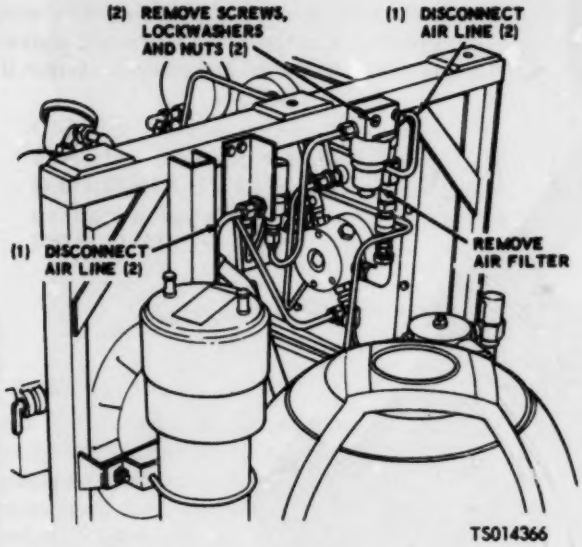


Figure 3-3. Air line filter and back pressure valve, removal and installation.

(3) Clean or replace the compressor air intake filter at 50 hour intervals (fig. 3-6).

3-4. Preventive Maintenance Services

This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by the operator. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to Table 3-1 for the preventive maintenance services.

Table 3-1. Operator/Crew Preventive Maintenance Checks and Services

B—Before Operation Time Required, 1.0 | D—During Operation | A—After Operation Time Required, 0.6

Interval and Sequence No.			Item to be inspected Procedure	Work time (M H)
B	D	A		
		1	ENGINE FUEL FILTER Service as required.	0.2
2			FUEL TANK Check fuel level. Inspect for leaks. Inspect fuel tank cap for closed vent hole.	0.2
3			ENGINE AIR CLEANER INDICATOR Check for red warning signal.	0.1
		4	TIRES AND TUBES Inspect for proper inflation, cuts breaks, and flat spots. Replace missing valve caps.	0.2
5			ENGINE OIL DIPSTICK Check engine lubricating oil level. Add oil as required.	0.1
		6	COMPRESSOR AIR INTAKE FILTER Inspect for dirt and damage. Clean or replace as required.	0.2
7			AIR COMPRESSOR Clean cooling fins. Check air lines for leaks.	0.2
8			SIGHT LEVEL GAGE Check compressor lubricating oil level. Add oil as required.	0.1
9			AIR SYSTEM Drain the air system after daily use.	0.1
10			AIR RECEIVER Inspect for worn harness assembly. Check for secure mounting.	0.2

Section III. TROUBLESHOOTING

3-5. General

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the compressor. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help to determine probable causes and corrective action to be taken. Perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections, and corrective action. If a malfunction is not listed or is not corrected by tested corrective actions, notify your supervisor.

3-6. Operator Maintenance Troubleshooting

Refer to Table 3-2 for troubleshooting pertaining to operator's maintenance.

Table 3-2. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. ENGINE FAILS TO START OR IS HARD TO START
Step 1. Fuel for an empty tank.
Fill fuel tank.
Step 2. Check for a dirty fuel system.
Service fuel filter.
Step 3. Remove and inspect the air cleaner.
Service the air cleaner.
2. ENGINE STARTS BUT FAILS TO CONTINUE RUNNING.
Step 1. Check for an insufficient fuel supply.
Replenish fuel supply.
Step 2. Remove and inspect the air cleaner.
Service the air cleaner.
3. ENGINE MISSES OR RUNS ERRATICALLY
Step 1. Check for an improperly or defective carburetor.
Adjust or replace carburetor.
Step 2. Check fuel filter to see if it is clogged or filter element is dirty.
Remove and clean the filter.
4. INSUFFICIENT AIR FLOW, LOW OUTLET PRESSURE, OR EXCESSIVE PUMPUP TIME
Step 1. Check for restricted air inlet to compressor first stage cylinder.
Clean or replace intake filter.
Step 2. Check for partially closed shut-off valve to air receiver.
Open valve.
5. COMPRESSOR OVERHEAT
Step 1. Check for low oil supply.
Replenish oil supply.
Step 2. Check for insufficient or obstructed flow of cooling air.
Position cart to provide adequate flow of air. Open access doors.
6. EXCESSIVE MOISTURE OR OIL VAPOR IN HIGH PRESSURE AIR
Step 1. Check for a saturated desiccant cartridge.
Replace cartridge.

Section IV. MAINTENANCE PROCEDURES

3-7. General

Instructions in this section are published for the information and guidance of the operator to maintain the compressor assembly.

3-8. Engine Service

Refer to TM 5-2805-257-14 for engine service instructions.

3-9. Fuel System Service

a. Refer to Figure 3-4 and service the fuel tank.

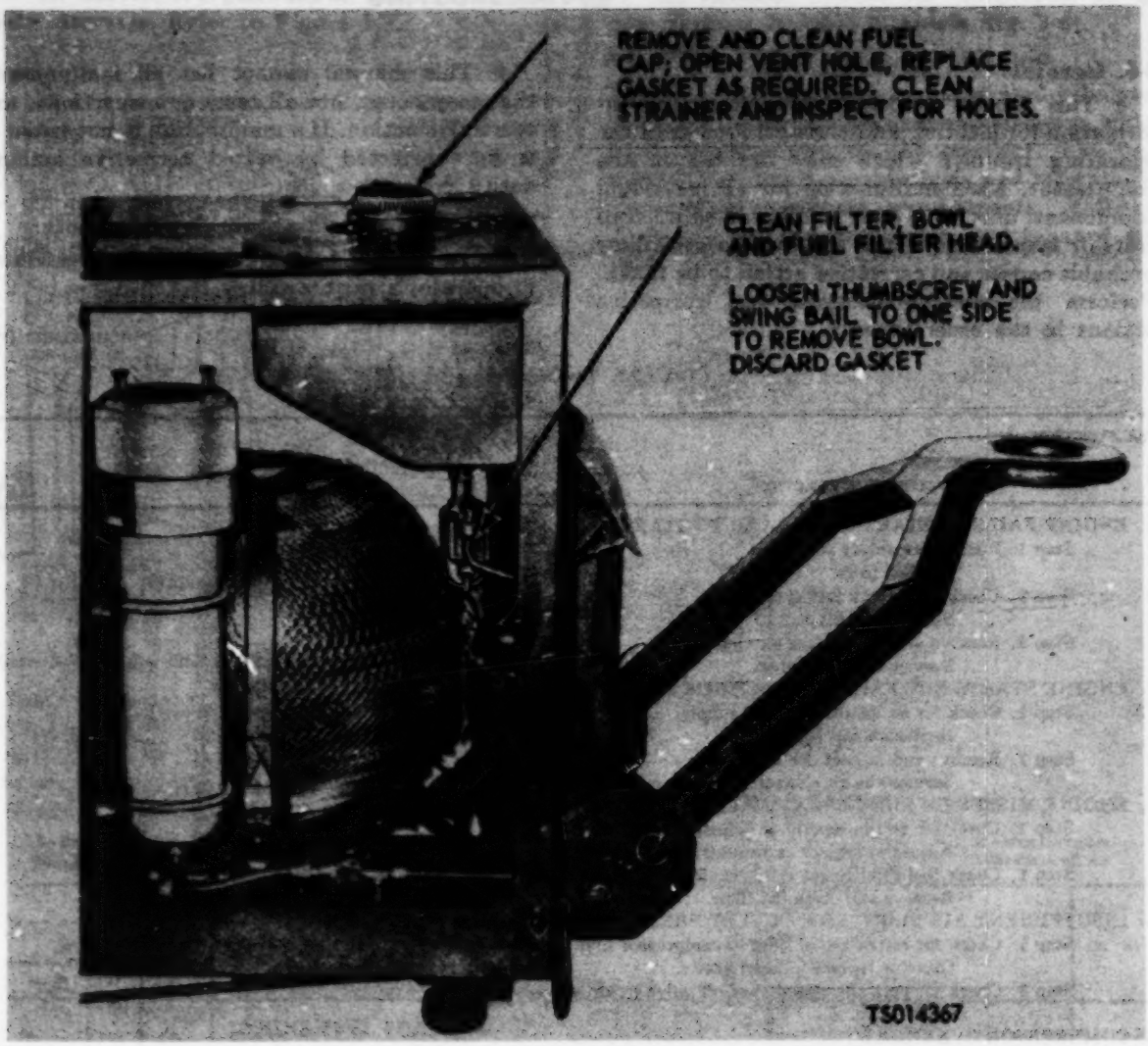

REMOVE AND CLEAN FUEL CAP; OPEN VENT HOLE, REPLACE GASKET AS REQUIRED. CLEAN STRAINER AND INSPECT FOR HOLES.
CLEAN FILTER, BOWL AND FUEL FILTER HEAD.
LOOSEN THUMBSCREW AND SWING BAIL TO ONE SIDE TO REMOVE BOWL. DISCARD GASKET
TS014367

Figure 3-4. Fuel system service.

b. Refer to Figure 3-4 and service the fuel filter.

3-10. Dehydrator Service

a. Unscrew cap and remove perforated head and cartridge seal assembly.

b. Lift desiccant cartridge out of housing and replace if the blue color has faded.

c. Fit the cap assembly into place, press down and start threads. Screw cap assembly down to a moderately tight fit using a hand tool between the cap lugs. Pressurize system slowly and check for leaks.

3-11. Wheels, Tires, and Tubes Service

Refer to Figure 3-5 and service the wheels, tires, and tubes.

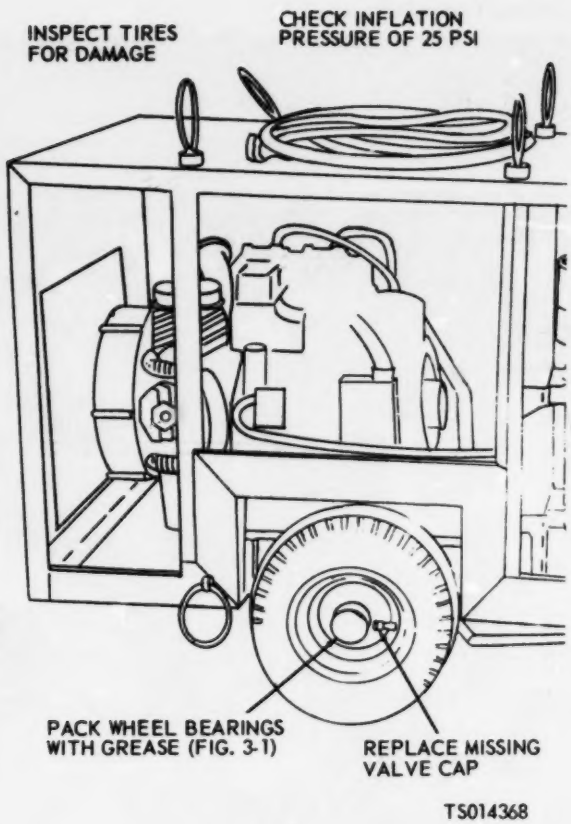

INSPECT TIRES FOR DAMAGE
CHECK INFLATION PRESSURE OF 25 PSI
PACK WHEEL BEARINGS WITH GREASE (FIG. 3-1)
REPLACE MISSING VALVE CAP
TS014368

Figure 3-5. Wheels, tires and tubes service.

3-12. Air Compressor Assembly Service

a. Refer to Figure 3-6 and service the cooling fins.

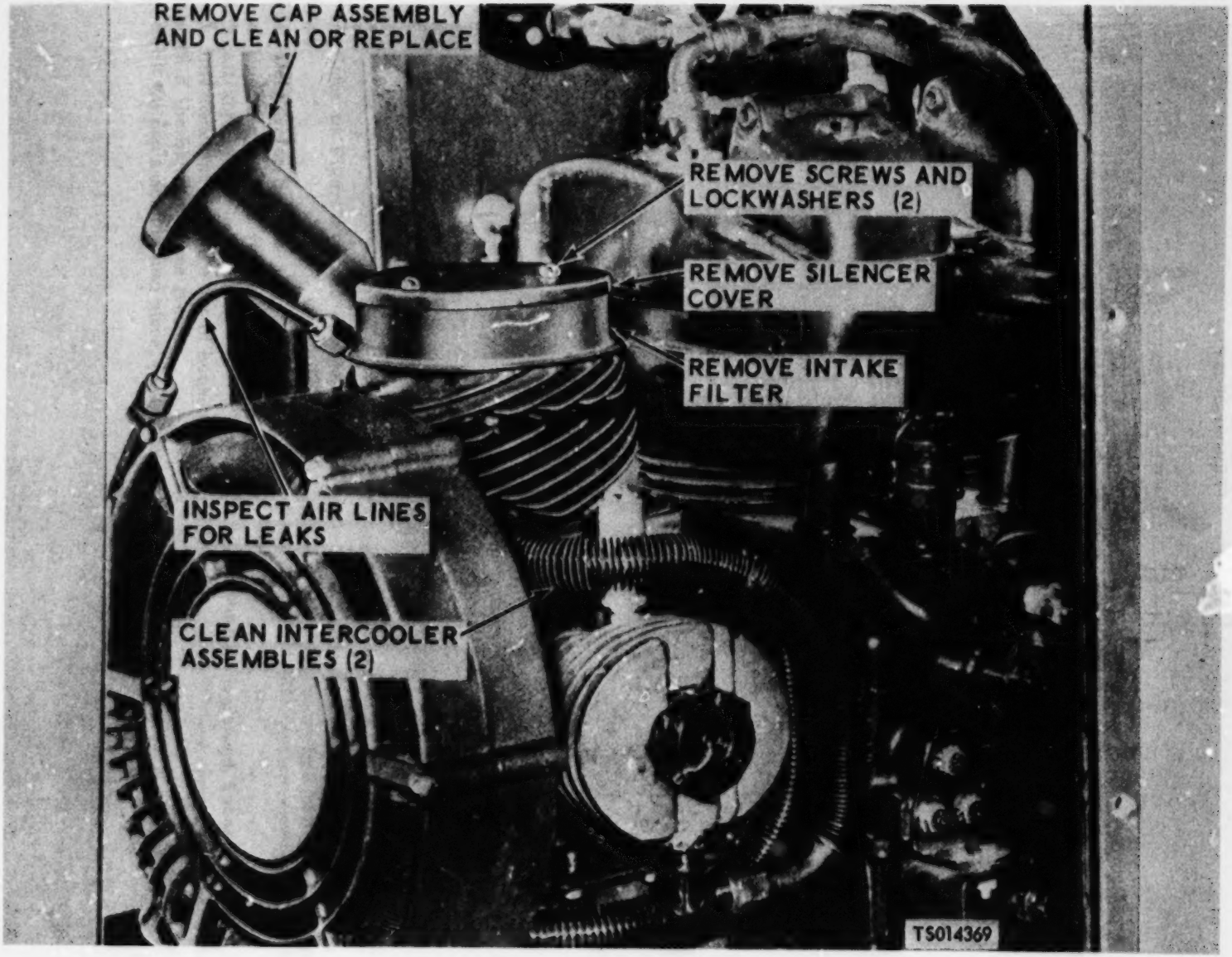

REMOVE CAP ASSEMBLY AND CLEAN OR REPLACE
REMOVE SCREWS AND LOCKWASHERS (2)
REMOVE SILENCER COVER
REMOVE INTAKE FILTER
INSPECT AIR LINES FOR LEAKS
CLEAN INTERCOOLER ASSEMBLIES (2)
TS014369

Figure 3-6. Air compressor service.

b. Refer to Figure 3-6 and clean or replace the air intake filter.

c. Refer to Figure 3-6 and clean the oil fill and breather assembly.

3-13. Air System

a. Refer to Figure 3-7 and drain the air system.

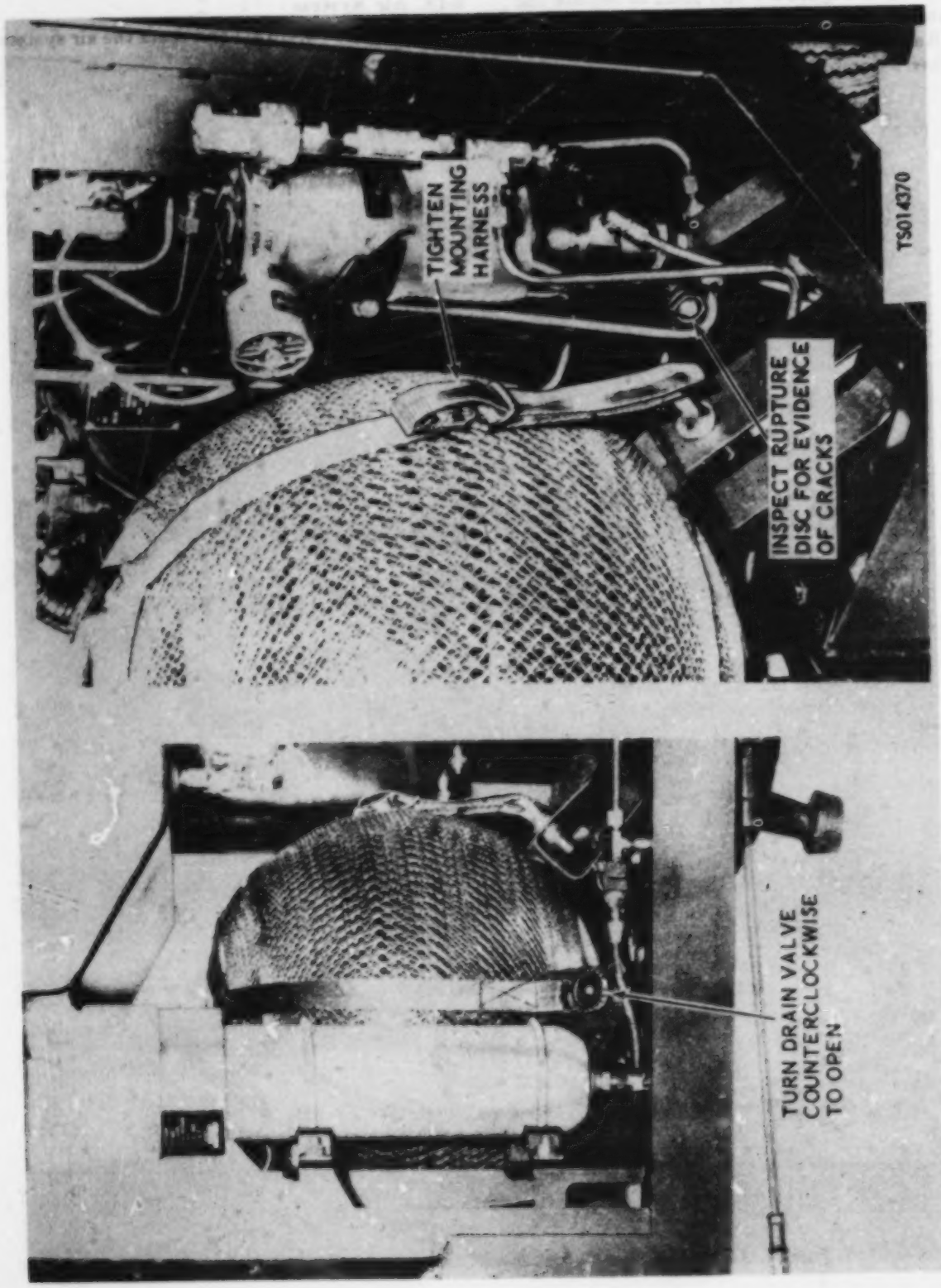

TIGHTEN MOUNTING HARNESS
INSPECT RUPTURE DISC FOR EVIDENCE OF CRACKS
TS014370
TURN DRAIN VALVE COUNTERCLOCKWISE TO OPEN

Figure 3-7. Air system service.

b. Refer to Figure 3-7 and check the air receiver.

3-14. Air Line Filter Service

Refer to Figure 3-8 and service the air line filter.

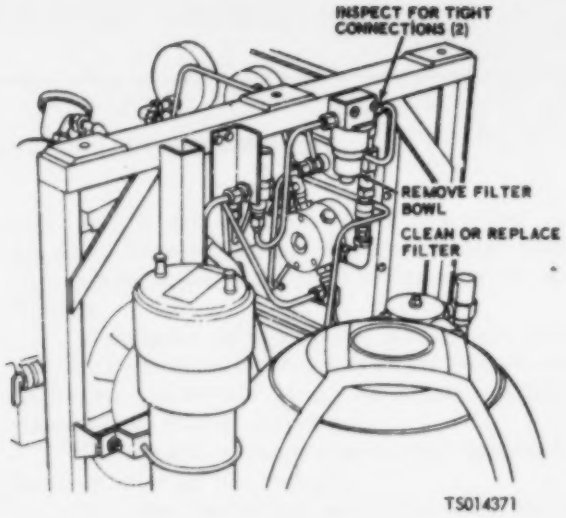


Figure 3-8. Air line filter service.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

4-1. Unpacking Equipment

a. Remove the crating and protective barrier material, taking care not to damage the equipment.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 ° F. (38 ° C.) — 138 ° F. (59 ° C.).

b. Wipe the preservatives from the following items with approved cleaning solvent, Fed. Spec. P-D-680:

(1) Control wires and linkage.

(2) All other parts coated with a preservative material.

c. Drain all preservation from the following items:

(1) Fuel tank.

(2) Compressor crankcase.

(3) Compressor assembly.

(4) Air cleaner.

d. Remove the pressure sensitive tape from the following items:

(1) Gages and meters on the control panel.

(2) Air cleaner assembly.

(3) Muffler openings.

(4) All valves.

e. Make a thorough inspection of the equipment and remove any other preservative material and pressure sensitive tape.

f. Inspect tires for improper inflation, cuts, breaks, blisters, and flat spots. Inspect valve stems for leaks. Replace missing valve caps.

4-2. Inspection and Servicing Equipment

a. Inspecting the Equipment.

(1) Inspect for evidence of loose components or parts, and damage which may have occurred during shipment.

(2) Inspect all lines, hoses, fittings, and plugs to see that they are secure and tight.

(3) Inspect and tighten or replace any loose or missing nuts, bolts, or screws.

(4) Inspect the controls, instruments, gages, and valves for damage, loose mounting, or binding. Replace damaged parts, tighten loose mountings, and free-up any binding of levers and linkage.

(5) Inspect all accessible wiring for loose connections, cuts, burns, frayed insulation, and damaged terminals and shielding. Replace damaged wiring or terminals.

(6) Inspect the engine air cooling system for bent or missing air shrouds.

(7) After servicing as prescribed below, crank the engine several times to make sure the engine and magneto are free.

(8) Inspect publications for completeness.

b. Servicing the Equipment.

(1) *Lubrication.* Refer to Figure 3-1 for lubrication.

NOTE

Refer to TM 5-2805-257-14 for engine lubrication.

(2) *Preventive Maintenance.* Refer to Table 3-1 for preventive maintenance services.

NOTE

Refer to TM 5-2805-257-14 for engine maintenance.

(3) *Cold Weather Servicing.*

(a) Refer to Figure 3-1 for cold weather lubrication.

NOTE

Refer to TM 5-2805-257-14 for engine servicing.

(b) Apply 27.0 volts, direct current, to the MOISTURE SEPARATOR electrical receptacle on the control panel. See Figure 2-1.

4-3. Installation and Setting Up Instructions

a. Location. Where installation conditions permit, avoid a muddy, sandy, or dusty site. If it is necessary to install the unit on soft ground, arrange a foundation of planking, logs or concrete.

b. Indoor Installation. Make sure the floor is sufficiently strong to support the unit. Provide at least four feet of space on all sides of the unit to provide accessibility. Make sure the area is well

ventilated. Pipe the exhaust of the engine outside the building. Arrange the piping with a minimum of bends, and make sure all connections are tight.

WARNING

Do not operate the compressor assembly in an enclosed area unless exhaust gases are piped to the outside. Inhalation of exhaust fumes will result in serious illness or death.

c. Leveling. Keep the unit as level as possible.

d. Depress the foot pedal at the front of the unit to lower the support stand. See Figure 1-1.

NOTE

Wheel brakes are applied when the support stand is lowered.

e. Raise the towbar to the vertical position and lock with the lock pin.

f. Noise Hazard Warning Signs. Signs conforming to requirements of AR 385-30 will be erected in the area to provide notification of NOISE HAZARD in accordance with TB MED 251. The signs should read:

WARNING

NOISE HAZARD EQUIPMENT HEARING PROTECTION REQUIRED.

Section II. MOVEMENT TO NEW WORK SITE

4-4. Dismantling for Movement

a. Preparation for Movement.

(1) Disconnect the air hose and chuck assembly from the outlet on the panel and replace on the stowage brackets.

(2) Disconnect the exhaust pipe extension, if used.

(3) If the compressor assembly is to be moved by common carrier, drain the fuel tank.

b. Movement.

(1) Lower the towbar to the towing position and install the lock pin.

(2) Raise the foot pedal to retract the support stand and release the wheel brakes.

(3) Connect the towbar to the towing vehicle.

CAUTION

Do not exceed 10 MPH when towing the compressor assembly on pavement; reduce speed accordingly for other road conditions.

(4) For longer distances or over rough terrain, attach lifting cables to the lifting rings on the compressor assembly and loist the unit onto a carrier. Use tie-downs to prevent shifting during transportation.

4-5. Reinstallation after Movement

a. Install the Compressor Assembly. To install the compressor, follow instructions contained in Paragraph 4-3.

b. Inspect and Service. To perform the inspection and service, refer to Paragraph 4-2.

Section III. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

4-6. Tools and Equipment

Tools, equipment and repair parts issued with or authorized for the pumping unit are listed in TM 5-4310-275-24P. Refer to TM 5-2805-257-24P for engine parts.

4-7. Special Tools and Equipment

No special tools or equipment are required by organizational maintenance personnel for maintenance of the compressor assembly.

4-8. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in TM 5-4310-275-24P. Repair parts and equipment for the engine are listed in TM 5-2805-257-24P.

Section IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

4-9. General

a. This paragraph contains an illustrated tabulated listing of preventive maintenance services which must be performed by organizational maintenance personnel at quarterly intervals. A quarterly interval is equal to 3 calendar months, or 250 hours of operation whichever occurs first.

b. The item numbers are listed consecutively and indicate the sequence of minimum requirements. Refer to able 4-1 for the quarterly preventive maintenance services.

Table 4-1. Organizational Preventive Maintenance Checks and Services

Q—Qrarterly
Total Man-hours Required, 2.7

Sequence Number	Item to be inspected Procedure	Work Time (M / H)
1	TOWING ATTACHMENTS Check for bent or broken parts.	0.2
2	ENGINE FUEL FILTER Service as required.	0.3
3	FUEL TANK Clean fuel tank cap. Inspect for damaged screen. Check attaching hardware for tightness.	0.2
4	ENGINE CONTACT ASSEMBLIES Adjust point gap at 0.018 in. (.0457 cm).	0.2
5	ENGINE AIR CLEANER Service as required.	0.2
6	ENGINE AIR CLEANER INDICATOR Check for red warning signal.	0.1
7	ENGINE OIL DIPSTICK Check engine lubricating oil level. Add oil as required.	0.1
8	COMPRESSOR CRANKCASE FILL AND BREATHER ASSEMBLY Clean and inspect for damaged parts.	0.2
9	TIRES Check tire inflation pressure.	0.2
10	WHEEL ASSEMBLY Inspect for worn bearings.	0.2
11	ENGINE SPARK PLUGS Clean and adjust gap at 0.028 in. (.0711 cm) to 0.033 in. (.0838 cm).	0.4
12	AIR LINE FILTER Replace filter element.	0.2
13	MOUNTING HARDWARE Check for loose nuts and bolts.	0.2

Section V. TROUBLESHOOTING

4-10. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the compressor assembly and its components. Each trouble symptom stated is followed by a list of probable causes. The possible remedy recommended is described opposite the probable cause. Any trouble beyond the scope of organizational maintenance shall be reported to direct support maintenance.

NOTE

Refer to TM 5-2804-257-14 for engine troubleshooting instructions.

4-11. Organizational Maintenance Troubleshooting

Refer to Table 4-2 for troubleshooting pertaining to organizational maintenance.

Table 4-2. TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. INSUFFICIENT AIR FLOW, LOW OUTLET PRESSURE, OR EXCESSIVE PUMP-UP TIME
Step 1. Insepect all connecting tubes and fittings for air leaks.
Tighten all connections, if the air leak continues, then replace the defective part with a similar item.
Step 2. Inspect the pressure relief valve for damage, defect (open) or escaping air.
Replace a defective pressure relief valve.
a. Removal.
(1) Disconnect all air lines.
(2) Remove all mounting hardware.
(3) Unscrew the relief valve.

Table 4-2. TROUBLESHOOTING [Cont'd]

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. INSUFFICIENT AIR FLOW, LOW OUTLET PRESSURE, OR EXCESSIVE PUMP-UP TIME—Continued
b. Installation. (1) Screw in the pressure relief valve. (2) Install all mounting hardware. (3) Connect all air lines.
Step 3. Check for leakage from the pneumatic dump valve due to damaged, dirty or defective parts. Clean and /or replace the valve. *a. Removal.* (1) Depress push valve on the control panel to relieve air pressure. (2) Remove the pressure relief valve, check valve, and back pressure valve. (3) Remove the separator and filter assembly.
WARNING **Dry cleaning solvent P-D-680 used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F.—138°F. (39°C.—59°C.).**
b. Cleaning. Clean the dump valve with dry cleaning solvent, Fed Spec P-D-680. *c. Installation.* (1) Screw the dump valve onto the separator assembly. (2) Install the separator and filter assembly. (3) Install the pressure relief, check valve, and back pressure valve.
Step 4. Inspect for a partially closed shut-off valve to receiver. Open valve.
Step 5. Check for a clogged line filter element. Replace the element.
Step 6. Inspect for restricted air inlet to compressor first stage cylinder. Remove the restriction.
Step 7. Check compressor for not operating at rated speed. Engine governor not properly adjusted or engine operating erratically. See TM 5-2805-257-14.
2. EXCESSIVE OIL CONSUMPTION (Air Compressor)
Inspect for oil leaks. Repair or replace parts as necessary.
3. AIR COMPRESSOR OVERHEATS
Step 1. Check for low oil supply. Replenish the oil supply.
Step 2. Inspect for insufficient or obstructed flow of cooling air. Position the cart to provide adequate flow of air through louvers. Open access doors.
Step 3. Check for clogged fins on cylinders or tubing. Clean thoroughly.
4. EXCESSIVE MOISTURE OR OIL VAPOR IN HIGH PRESSURE AIR
Step 1. Inspect the desiccant container. If the desiccant color has faded from the characteristic blue then discard. Unscrew the cap to lift out the desiccant containter.
Step 2. Check for partially full or defective filter and separator assembly. Press push valve to blow down condensate.

Section VI. RADIO INTERFERENCE SUPPRESSION

4-12. Definitions

a. Interference. The term "interference" as used herein applies to electrical disturbances in the radio frequency range which are generated by the compressor assembly and which may interfere with the proper operation of radio receivers or other electronic equipment, or enable the enemy to locate the equipment.

b. Interference Suppression. The term "interference suppression" as used herein applies to the methods used to eliminate or effectively reduce radio interference generated by the compressor assembly.

4-13. General Methods Used to Attain Proper Suppression

Essentially, suppression is attained by providing a low resistance path to ground stray currents. Methods used include shielding the ignition and high-frequency wires, grounding the frames with

bonding straps, and using capacitors and resistors.

NOTE

Do not pull on cable or twist braided shielding. Gently work cable from side to side and free the rubber seal. Do not use sharp metal tools to install rubber seals.

4-14. Interference Suppression Components

Refer to engine manual, TM 5-2805-257-14.

4-15. Replacement of Suppression Components

Refer to engine manual, TM 5-2805-257-14.

4-16. Testing of Radio Interference Suppression Components

Test the capacitors for leaks and shorts on a capacitor tester; replace defective capacitors. If test equipment is not available and interference is indicated, isolate cause by the trial-and-error method of replacing each capacitor in turn until the cause of interference is located and eliminated.

Section VII. MAINTENANCE OF ENGINE AND FUEL SYSTEM

4-17. General

Refer to the engine manual TM 5-2805-257-14 for a description of the engine fuel system.

4-18. Fuel Line Assemblies

a. Removal. Refer to Figure 4-1 and remove the fuel line assemblies.

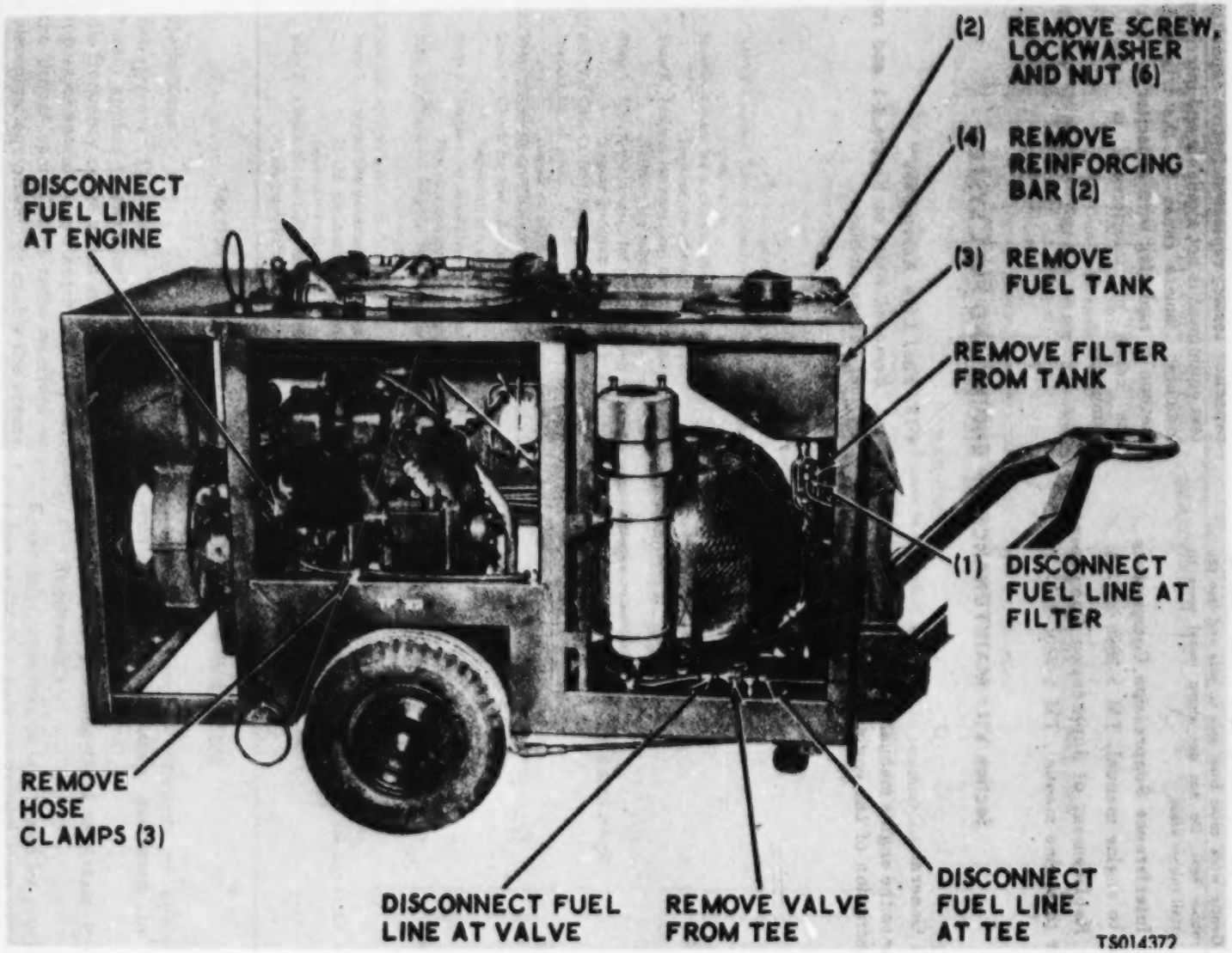

(2) REMOVE SCREW, LOCKWASHER AND NUT (6)
(4) REMOVE REINFORCING BAR (2)
(3) REMOVE FUEL TANK
REMOVE FILTER FROM TANK
(1) DISCONNECT FUEL LINE AT FILTER
DISCONNECT FUEL LINE AT ENGINE
REMOVE HOSE CLAMPS (3)
DISCONNECT FUEL LINE AT VALVE
REMOVE VALVE FROM TEE
DISCONNECT FUEL LINE AT TEE
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Figure 4-1. Fuel tank, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Clean the interior of the fuel lines with compressed air.

(3) Inspect the fuel line fittings for cracks and damaged threads.

(4) Inspect the fuel lines for cracks and kinks.

(5) Replace damaged or defective parts as necessary.

c. Installation. Refer to Figure 4-1 and install the fuel line assemblies in reverse sequence of removal.

4-19. Fuel Tank Removal and Installation

a. Removal. Refer to Figure 4-1 and remove the fuel tank.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect the fuel tank for dents and leaks.

(3) Check the fuel strainer for damage.

(4) Replace all damaged or defective parts.

c. Installation. Refer to Figure 4-1 and install the fuel tank in reverse sequence of removal.

4-20. Exhaust Pipe Removal and Installation

a. Removal. Refer to Figure 4-2 and remove the exhaust pipe assembly.

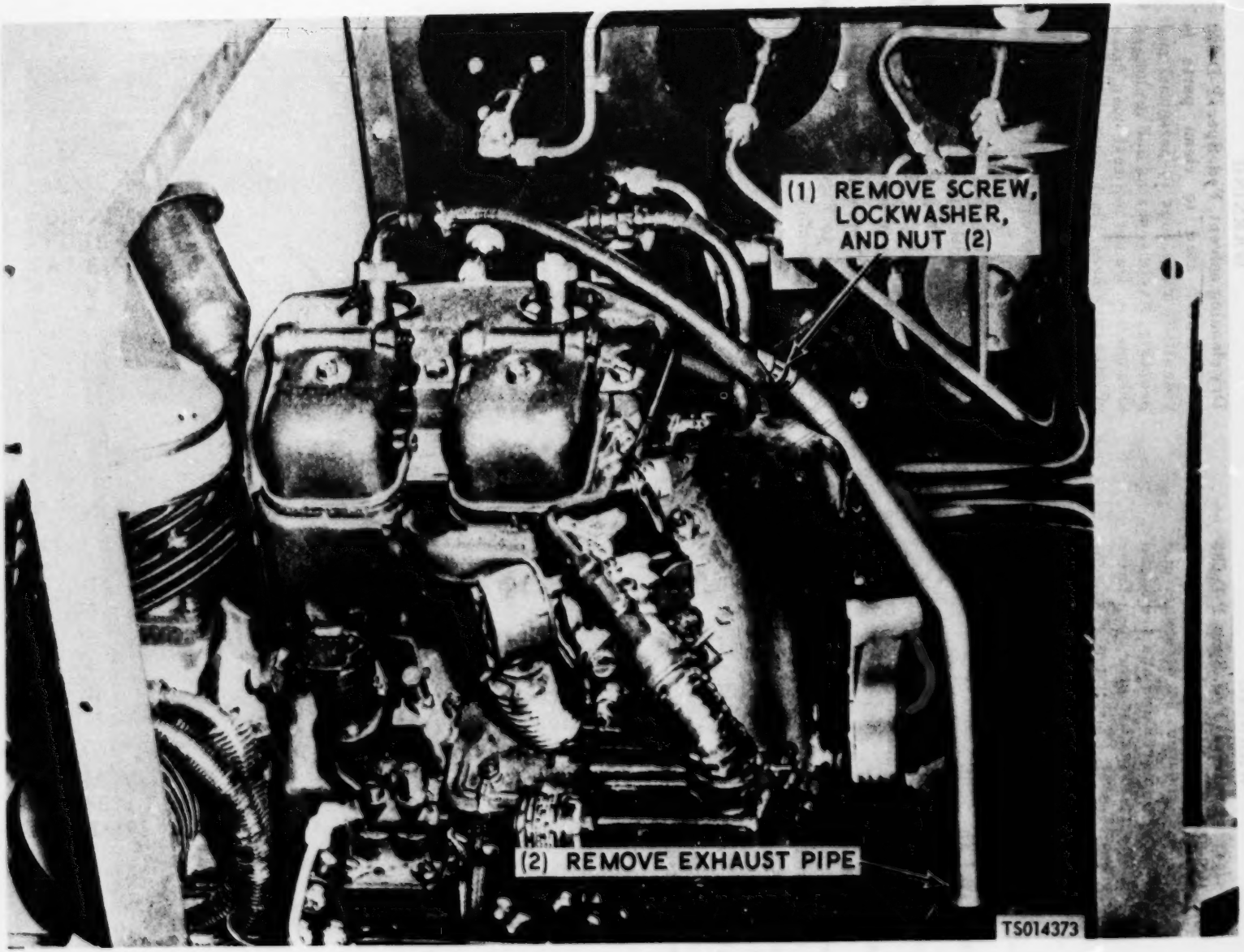


Figure 4-2. Exhaust pipe, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean the exhaust pipe with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Scrape carbon deposits from the exhaust pipe.

(3) Inspect for cracks, particularly at the flange.

(4) Replace the gasket and a defective exhaust pipe.

c. Installation. Refer to Figure 4-2 and install the exhaust pipe in reverse of removal.

Section VIII. AXLES, BRAKES, AND WHEELS

4-21. General

a. Pneumatic tires and tubes, mounted on the wheel assemblies, provide necessary shock absorption for the compressor assembly. The wheel assemblies are installed on a one piece axle which is attached directly to the frame.

b. The brake assembly is actuated by the support stand assembly. When the support stand is depressed a connecting link pushes the brake shoes against the tires. The edge of the brake shoe engages in the tire tread to provide a stabilizing force.

4-22. Tires and Tubes Removal and Installation

a. Removal.

(1) Raise the compressor assembly until the wheel is sufficiently off the ground to allow removal. Support the compressor assembly in the raised position.

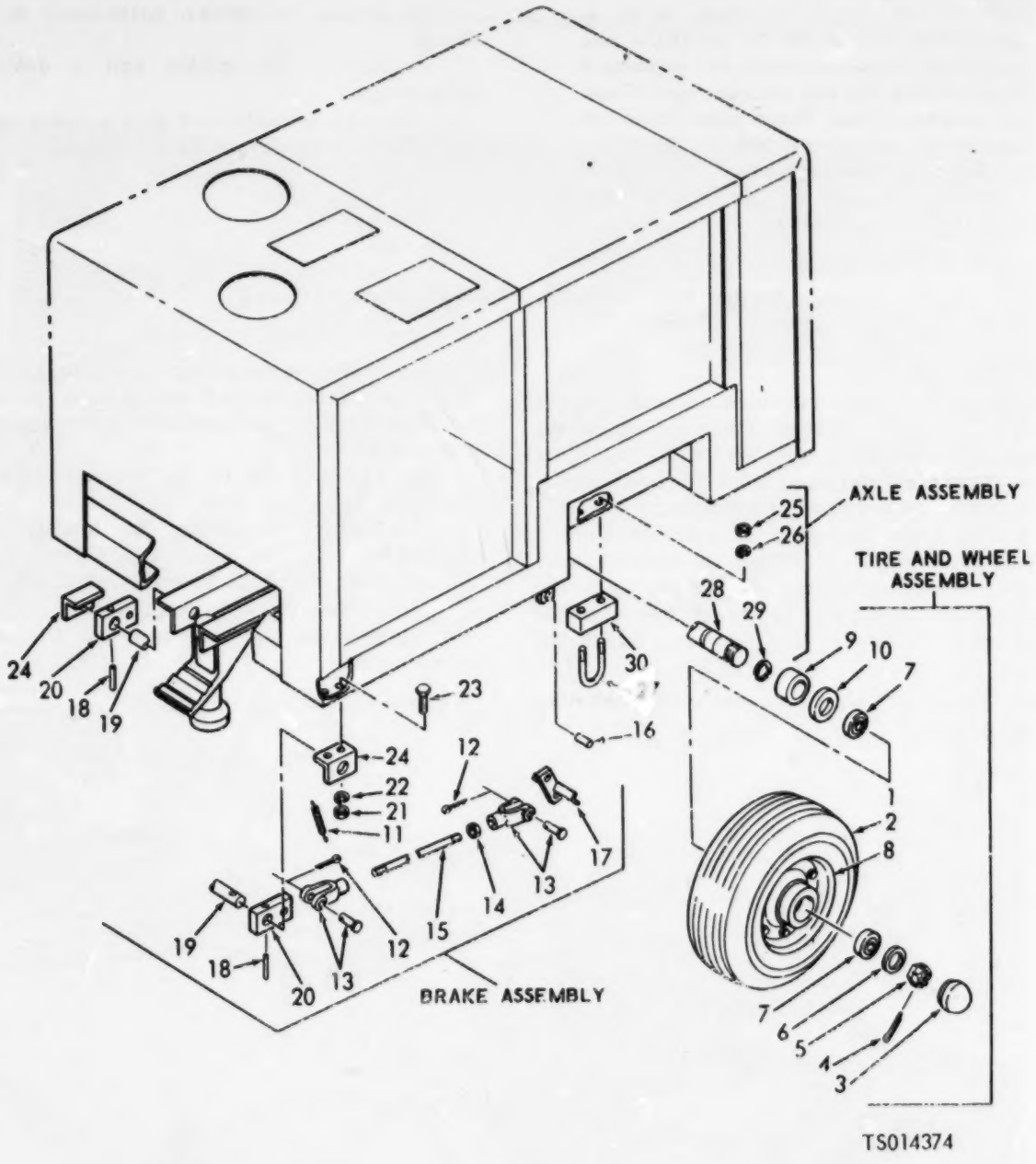
(2) Pry dust cap (3, fig. 4-3) off the wheel assembly hub.

(3) Remove cotter pin (4), nut (5), and washer (6).

(4) Pull the wheel assembly off the axle.

(5) Deflate the tube completely.

(6) Pry the tire and tube off the wheel assembly.



1. Tire
2. Tube
3. Dust cap
4. Cotter pin
5. Nut
6. Washer
7. Bearing
8. Wheel assembly
9. Spacer
10. Seal
11. Spring
12. Cotter pin
13. Yoke
14. Nut
15. Brake rod
16. Pin
17. Brake shoe
18. Pin
19. Pivot shaft
20. Pivot block
21. Nut
22. Lockwasher
23. Screw
24. Bracket
25. Nut
26. Lockwasher
27. U-bolt
28. Axle
29. Retaining ring
30. Spacer

Figure 4-3. Tires, wheels, axle and brake, removal and installation.

b. Cleaning and Inspection.

(1) Clean the tires with water.

(2) Remove foreign material imbedded in the tire. If nails or other penetrating objects are imbedded in the tire, inspect the tube for punctures.

(3) Inspect the tires for cracks, deep cuts, or separated tread.

c. Installation.

(1) Pry one side of the tire onto the wheel assembly.

(2) Place the tube inside the tire, with the tube valve stem inserted through the hole in the wheel assembly.

(3) Pry the remaining side of the tire onto the wheel.

(4) Inflate the tube to 25 psi air pressure (40 psi maximum).

(5) Refer to Figure 4-3 and install the wheel and tire assembly onto the axle in reverse sequence of removal.

4-23. Wheel Assemblies Removal and Installation

a. Removal.

(1) Raise the compressor assembly until the wheels are off the ground. Support the unit in the raised position.

(2) Ensure that the support stand is in the raised position and the brakes are released.

(3) Pry dust cap (3, fig. 4-3) out of the wheel hub.

(4) Remove cotter pin (4), nut (5) and wheel assembly (8) from the axle.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 ° F. (38 ° C.) — 138 ° F. (59 ° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680. Dry thoroughly.

(2) Inspect the bearing spacer (9, fig. 4-3), bearings (7) and wheel hub for pitting, grooving, excessive wear, and axial play.

(3) Inspect the wheel for missing capscrews and washers, and for cracks.

(4) Replace seal (10) and any defective part.

c. Repair. Replace any defective or damaged part.

d. Installation.

(1) Refer to the lubrication chart (fig. 3-1) and pack the wheel bearings with lubricant.

(2) Refer to Figure 4-3 and install the wheel assemblies in reverse sequence of removal.

4-24. Brake Assembly Removal and Installation

a. Removal. Refer to Figure 4-3 and remove the brake assembly in the same sequence of the index numbers (11 through 24).

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 ° F. (38 ° C.) — 138 ° F. (59 ° C.).

b. Cleaning and Inspeation.

(1) Clean the parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for bent or broken parts, damaged threads, and worn pivot surfaces.

c. Repair. Replace any defective or damaged part.

d. Installation.

(1) Refer to Figure 4-3 and install the brake assembly in reverse sequence of removal.

(2) Adjust the brake rod (15) to ensure that the brake shoe (17) is in tight contact with the tire when the support stand is depressed, and the shoe does not contact the tire when the support stand is raised. Tighten the lock nuts (14).

4-25. Axle Assembly Removal and Installation

a. Removal.

(1) Raise the compressor assembly until the wheels are off the ground. Support the unit in the raised position.

(2) Remove the wheel assemblies.

(3) Refer to Figure 4-3 and remove the axle assembly in the same sequence as the index numbers (23 through 38).

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 ° F. (38 ° C.) — 138 ° F. (59 ° C.).

b. Cleaning and Inspection.

(1) Clean the parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for bent axle and damaged threads.

c. Repair. Replace any defective or damaged part.

d. Installation.

(1) Refer to Figure 4-3 and install the axle assembly in reverse sequence of removal.

(2) Install the wheel assemblies.

Section IX. PNEUMATIC EQUIPMENT

4-26. General

The pneumatic equipment includes the air compressor, air receiver, separator and filter assembly, dehydrator assembly, line filter assembly, gages, valves, connecting lines, and the air discharge hose assembly.

4-27. Air Discharge Hose Assembly Replacement

a. Removal.

(1) The air discharge hose assembly is not connected to the compressor assembly unless in use.

(2) Unwrap the air discharge hose assembly from the storage brackets attached to the top of the compressor enclosure (fig. 1-3).

b. Disassembly. Refer to Figure 4-4 and disassemble the air discharge hose assembly in the same sequence as shown.

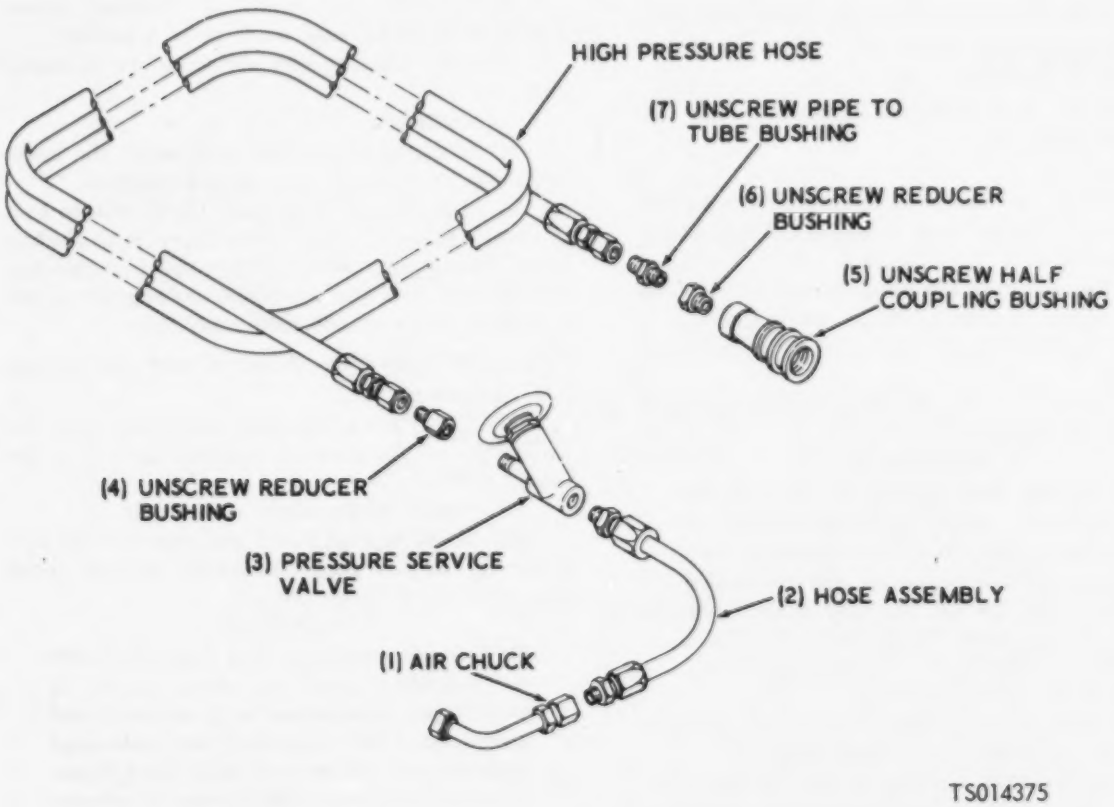


Figure 4-4. Air discharge hose assembly, disassembly and reassembly.

c. Cleaning and Inspection.

(1) Clean the hose assembly and parts with ethyl alcohol, Federal Specification O-E-760. Allow to air dry thoroughly.

(2) Inspect for frayed or worn hose.

(3) Inspect for damaged threads.

(4) Replace any part that is defective.

d. Assembly. Refer to Figure 4-4 and assemble the air discharge hose in reverse sequence of disassembly.

e. Installation. Wrap the air discharge hose assembly around the storage brackets and secure with the retainer (fig. 1-3).

4-28. Air Pressure Tank Safety Head Assembly and Pressure Relief Valve Removal and Installation

a. Removal. Refer to Figure 4-5 and remove the safety head assembly and pressure relief valve.

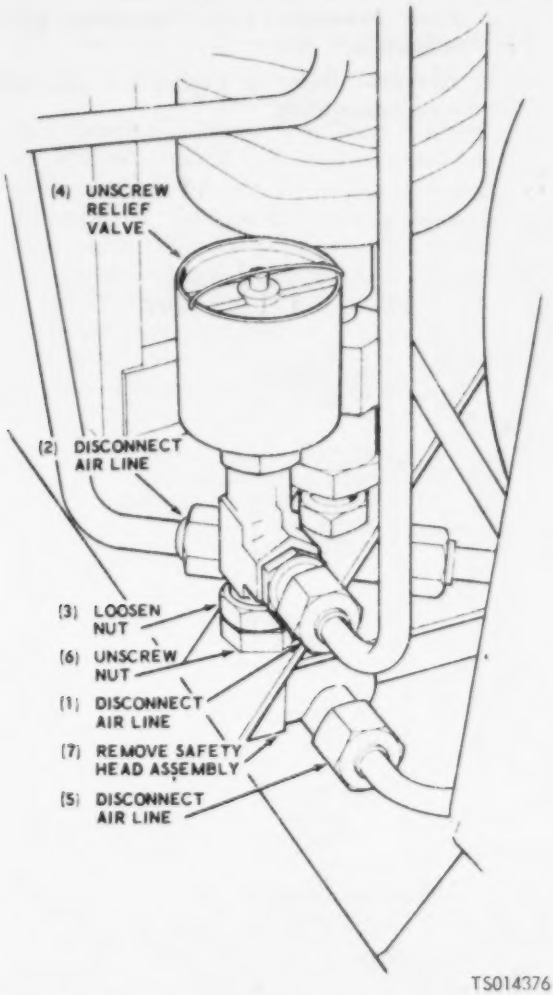


Figure 4-5. Air pressure tank safety head assembly and pressure relief valve, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean the safety head assembly with dry cleaning solvent, Fed. Spec. P-D-680. Dry with compressed air.

(2) Inspect for damaged threads, cracks, and evidence of deterioration.

(3) Inspect the rupture disc in the safety head for cracks.

c. Installation. Refer to Figure 4-5 and install the safety head assembly and the pressure relief valve in reverse of removal.

4-29. Air Line Filter Assembly and Back Pressure Valve Removal and Installation

a. Removal. Refer to Figure 4-6 and remove the filter assembly.

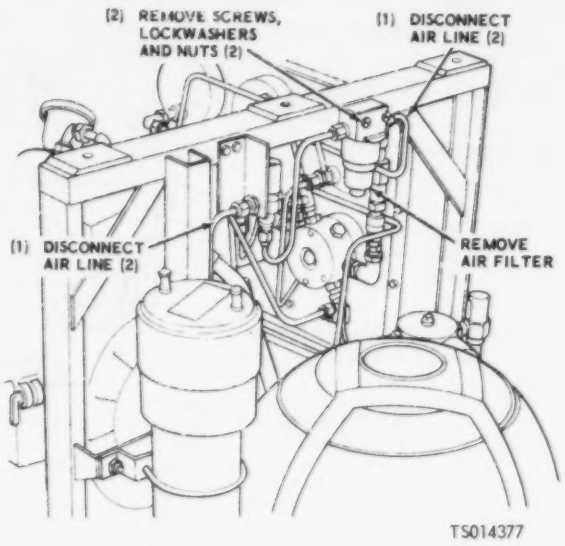


Figure 4-6. Air line filter and back pressure valve, removal and installation.

b. Cleaning and Inspection.

(1) Clean the filter assembly with ethyl alcohol, Federal Specification O-E-760.

(2) Inspect for cracks in the filter casing and damaged threads.

c. Installation. Refer to Figure 4-6 and install the filter assembly in reverse of removal.

4-30. Dehydrator Assembly and Desiccant Container Removal and Installation

a. Removal.

(1) Refer to Figure 3-2 and remove the desiccant container.

(2) Refer to Figure 3-2 and remove the dehydrator assembly.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame

or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Discard the desiccant container if the desiccant color has faded from the characteristic blue.

(2) Clean all metal parts with dry cleaning solvent, Fed. Spec. P-D-680. Dry with clean, lint-free cloth.

(3) Clean residue from all crevices, threads, and air passages with compressed air.

(4) Inspect for cracks and damaged threads.

(5) Replace all defective parts.

c. Installation.

(1) Refer to Figure 3-2 and install the dehydrator assembly in reverse of removal.

(2) Refer to Figure 3-2 and install the desiccant container in reverse of removal.

4-31. Pressure Relief Valve, Check Valve and Back Pressure Valve Removal and Installation

a. Removal. Refer to Figure 4-7 and remove the valve assemblies.

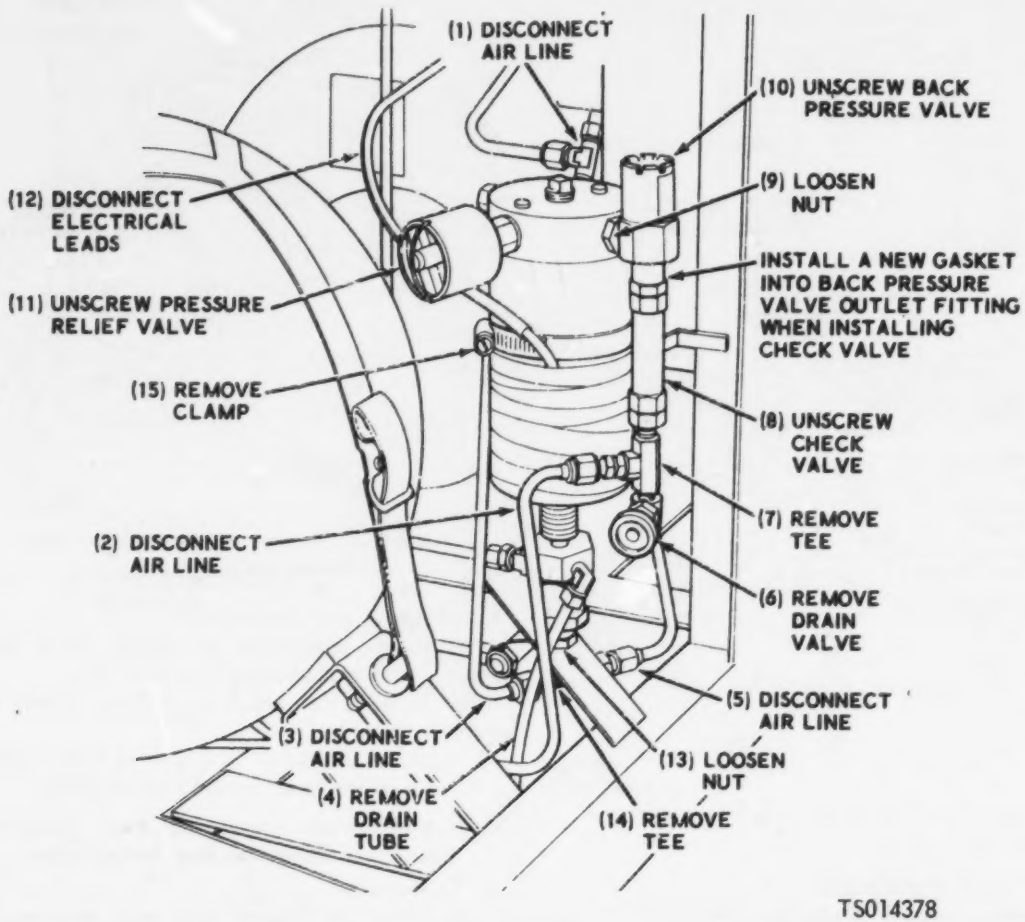

(1) DISCONNECT AIR LINE
(10) UNSCREW BACK PRESSURE VALVE
(12) DISCONNECT ELECTRICAL LEADS
(9) LOOSEN NUT
INSTALL A NEW GASKET INTO BACK PRESSURE VALVE OUTLET FITTING WHEN INSTALLING CHECK VALVE
(11) UNSCREW PRESSURE RELIEF VALVE
(15) REMOVE CLAMP
(8) UNSCREW CHECK VALVE
(7) REMOVE TEE
(2) DISCONNECT AIR LINE
(6) REMOVE DRAIN VALVE
(5) DISCONNECT AIR LINE
(3) DISCONNECT AIR LINE
(13) LOOSEN NUT
(4) REMOVE DRAIN TUBE
(14) REMOVE TEE
TS014378

Figure 4-7. Separator and filter assembly, pressure relief valve, check valve, back pressure valve, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean exterior surfaces with a cloth dampened with dry cleaning solvent, Fed. Spec. P-D-680. Do not soak the valve assemblies.

(2) Inspect for cracks and damaged threads.

(3) Replace a damaged valve assembly.

c. Installation. Refer to Figure 4-7 and install the valve assemblies in reverse of removal.

4-32. Separator and Filter Assembly and Dump Valve Removal and Installation

a. Removal.

(1) Depress push valve on the control panel to relieve air pressure (fig. 2-1).

(2) Remove the pressure relief valve, check valve, and back pressure valve.

(3) Refer to Figure 4-7 and remove the separator assembly.

(4) Unscrew the dump valve from the separator assembly.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Wipe the dirt from the separator assembly with a cloth dampened with dry cleaning solvent, Fed. Spec. P-D-680. Do not soak the heater blanket.

(2) Clean the dump valve with dry cleaning solvent, Fed. Spec. P-D-680.

(3) Inspect for broken electrical leads.

(4) Inspect for damaged threads.

c. Installation.

(1) Screw the dump valve onto the separator assembly.

(2) Refer to Figure 4-7 and install the separator and filter assembly.

(3) Install the pressure relief valve, check valve, and back pressure valve.

4-33. Instrument Panel Gages, Valves and Fittings Removal and Installation

a. Removal.

(1) Disconnect the air line at the component to be removed.

(2) Refer to Figure 4-8 and remove the component.

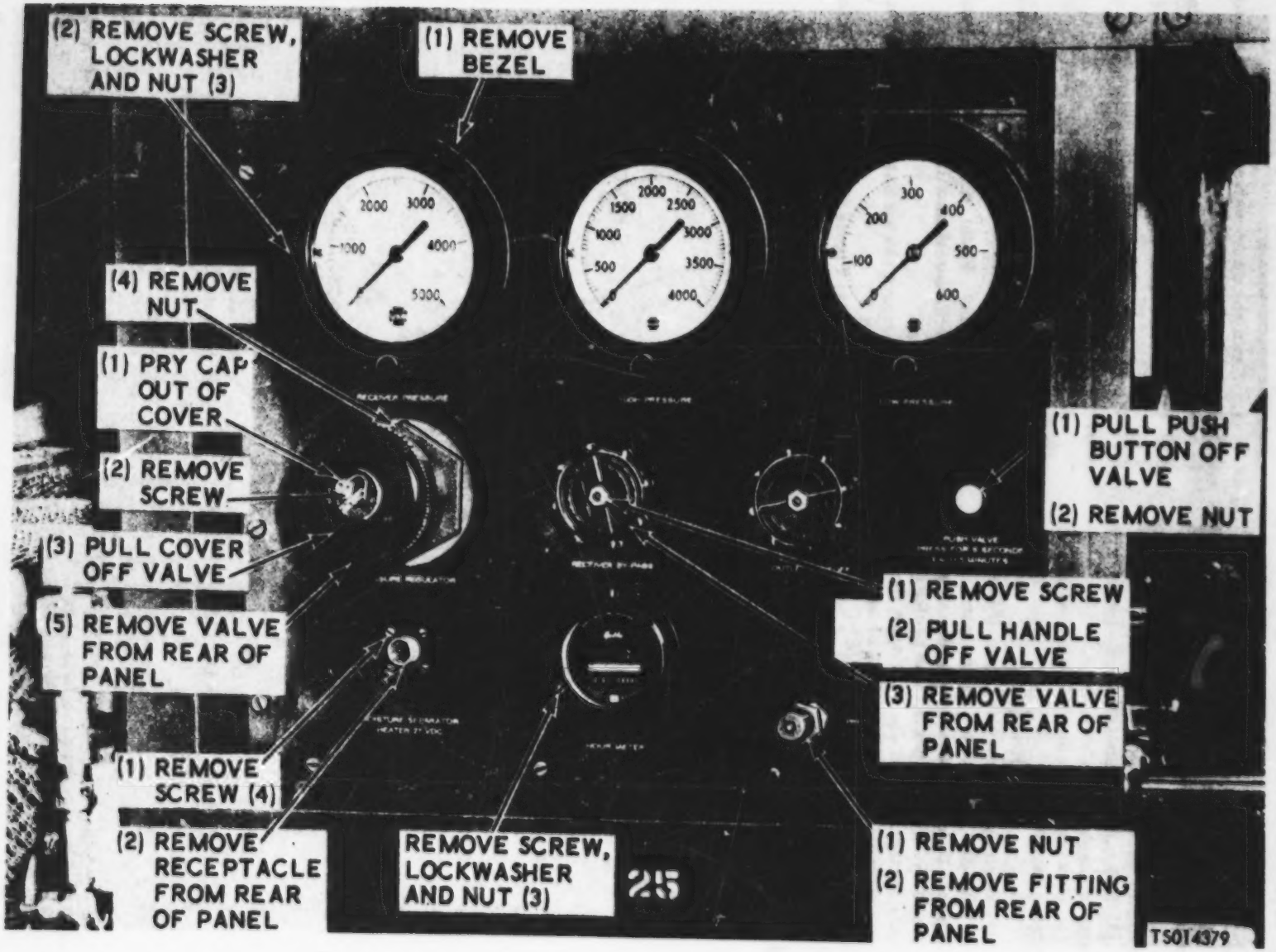

(2) REMOVE SCREW, LOCKWASHER AND NUT (3)
(1) REMOVE BEZEL
(4) REMOVE NUT
(1) PRY CAP OUT OF COVER
(2) REMOVE SCREW
(3) PULL COVER OFF VALVE
(5) REMOVE VALVE FROM REAR OF PANEL
(1) REMOVE SCREW (4)
(2) REMOVE RECEPTACLE FROM REAR OF PANEL
REMOVE SCREW, LOCKWASHER AND NUT (3)
(1) PULL PUSH BUTTON OFF VALVE
(2) REMOVE NUT
(1) REMOVE SCREW
(2) PULL HANDLE OFF VALVE
(3) REMOVE VALVE FROM REAR OF PANEL
(1) REMOVE NUT
(2) REMOVE FITTING FROM REAR OF PANEL
TS014379

Figure 4-8. Instrument panel gages, valves and fittings, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean exterior surfaces with a cloth dampened with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for damaged lenses, cracked casings, and damaged threads.

(3) Replace any defective part.

c. Installation.

(1) Refer to Figure 4-8 and install the component in reverse of removal.

(2) Connect the air line to the component.

4-34. Air Lines and Fittings Removal and Installation

a. Removal. Refer to Figure 4-9 and remove the assemblies.

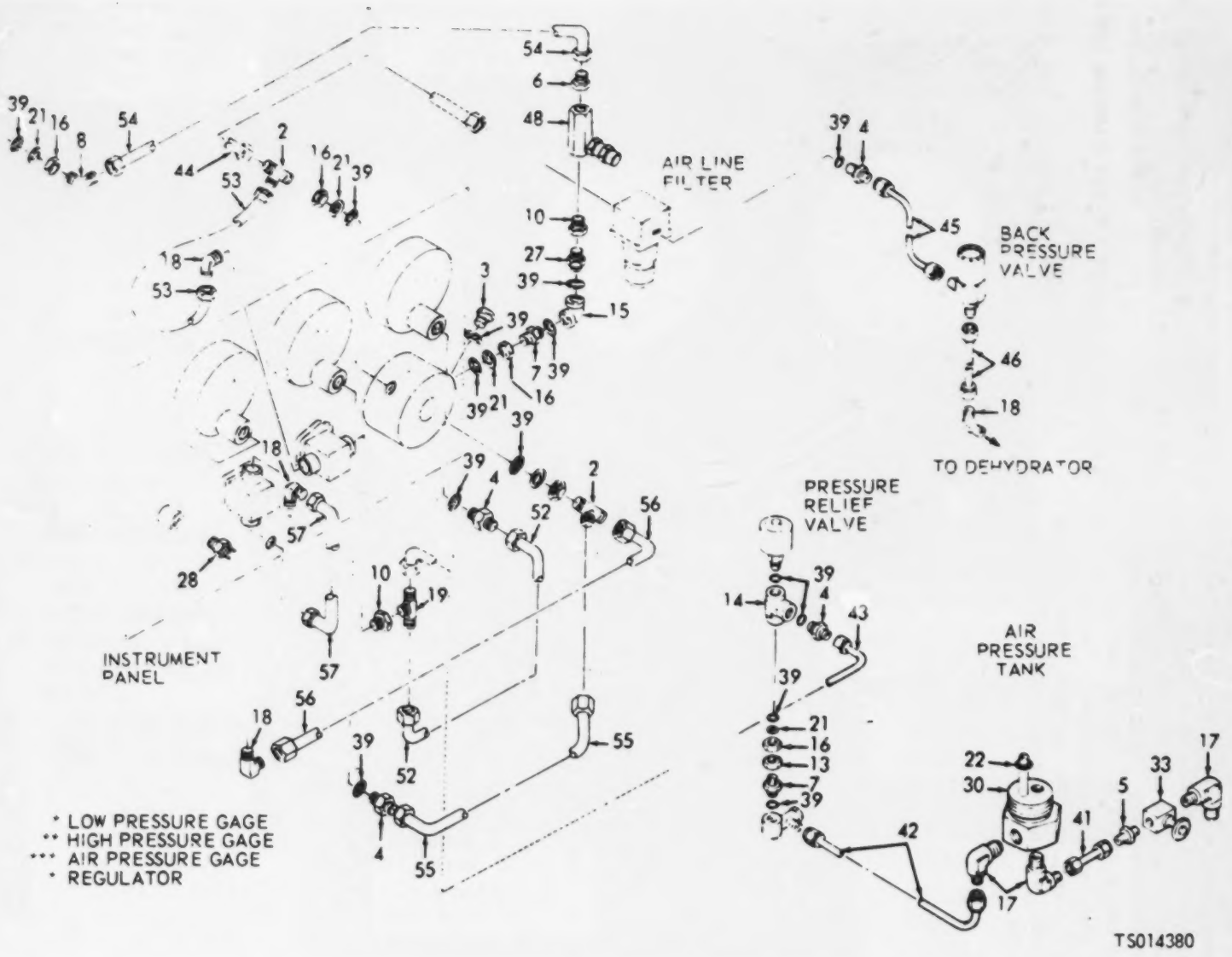
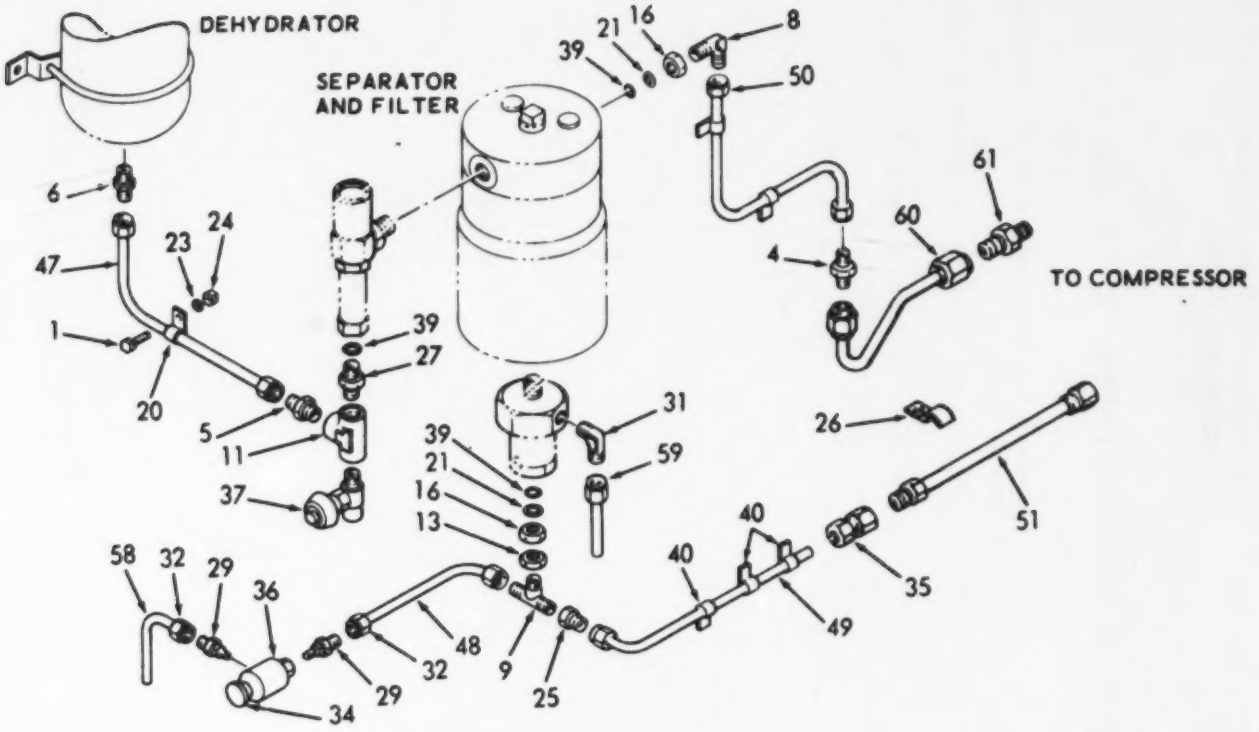


Figure 4-9. Air lines and fittings, removal and installation (sheet 1 of 2).



KEY to Figure 4-9 1 and 2.

1. Screw
2. Tee
3. Plug and bleeder
4. Union
5. Nipple
6. Nipple
7. Union
8. Elbow
9. Tee
10. Reducer
11. Tee
12. Reducer
13. Nut
14. Tee
15. Elbow
16. Nut
17. Elbow
18. Elbow
19. Tee
20. Clamp
21. Backup ring
22. Preformed packing
23. Lockwasher
24. Nut
25. Metering orifice
26. Clamp
27. Nipple
28. Union
29. Adapter
30. Adapter
31. Elbow
32. Nut
33. Valve
34. Pushbutton
35. Connector
36. Push valve
37. Drain valve
38. Gage protector
39. Gasket
40. Clamp
41. Air line assy, tank to drain
42. Air line assy, safety fitting to tank
43. Air line assy, shut-off valve to safety fitting
44. Air line assy, filter to pressure regulator
45. Air line assy, by-pass to filter
46. Air line assy, drier to by-pass
47. Air line assy, separator to drier
48. Air line assy, separator to dump valve
49. Air line assy, hose to dump valve
50. Hose assy, non-metallic
51. Air line assy, hose, 1st stage to dump
52. Air line assy, shut-off valve to tank
53. Air line assy, shut-off valve to regulator
54. Air line assy, regulator to low pressure gage
55. Air line assy, regulator to high pressure gage
56. Air line assy, regulator to shut-off valve
57. Air line assy, shut-off valve to outlet
58. Air line assy, dump valve to atmosphere
59. Air line assy, separator drain
60. Air line assy, aftercooler to hose
61. Reducer

Figure 4-9. Air lines and fittings, removal and installation (sheet 2 of 2).

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean the lines and fittings with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for cracks, kinks, and damaged threads.

c. Installation. Refer to Figure 4-9 and install the air lines and fittings.

Section X. BODY AND FRAME

4-35. General

Three housing sections are attached to the frame assembly to provide a protective covering for the air compressor and engine. The towing attachment, at the front of the unit, pivots vertically to allow the unit to be towed by various vehicles. A support stand attached to the front end of the frame provides a means to maintain the assembly in a level position and also actuates the parking brake.

4-36. Towing Attachment Removal and Installation

a. Removal. Refer to Figure 4-10 and remove the towing attachment.

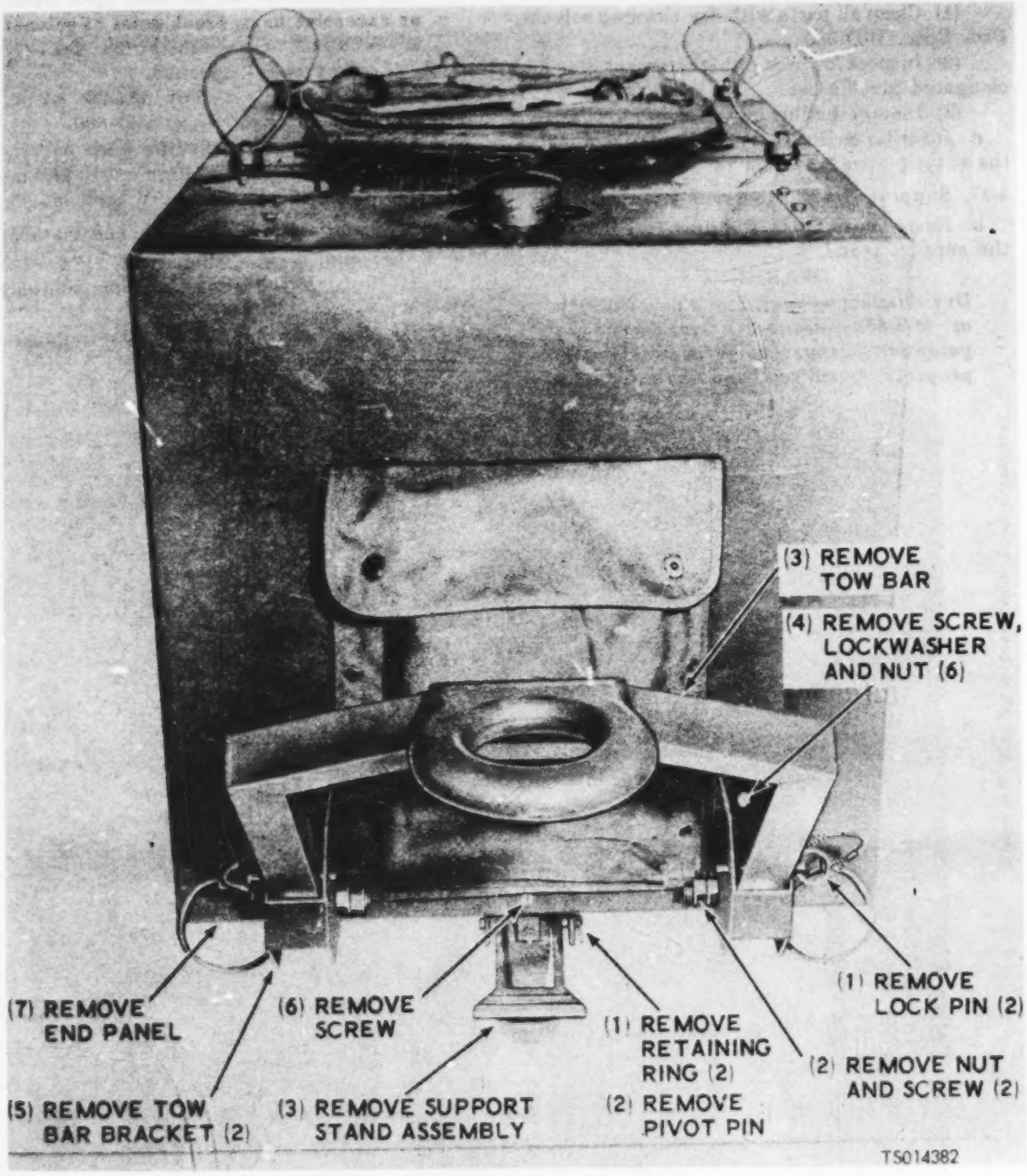

(3) REMOVE TOW BAR
(4) REMOVE SCREW, LOCKWASHER AND NUT (6)
(1) REMOVE LOCK PIN (2)
(2) REMOVE NUT AND SCREW (2)
(1) REMOVE RETAINING RING (2)
(2) REMOVE PIVOT PIN
(7) REMOVE END PANEL
(6) REMOVE SCREW
(5) REMOVE TOW BAR BRACKET (2)
(3) REMOVE SUPPORT STAND ASSEMBLY
TS014382

Figure 4-10. Towing attachment and support stand, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame of excessive heat. Flash point of solvent is 100° F. (38° C.) —138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for bent or broken pivot pins and elongated pivot holes.

(3) Inspect for bent or cracked towbar.

c. Installation. Refer to Figure 4-10 and install the towing attachment in reverse of removal.

4-37. Support Stand Removal and Installation

a. Removal. Refer to Figure 4-10 and remove the support stand.

WARNING

Dry cleaning solvnet, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvnet is 100° F. (38° C.) —138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean the support stand with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for cracked or worn parts.

c. Installation. Refer to Figure 4-10 and install the support stand in reverse of removal.

4-38. Housing Sections Removal and Installation

a. Removal.

(1) Remove the towing attachment (para 4-36).

(2) Refer to Figure 4-11 and remove the panel assemblies.

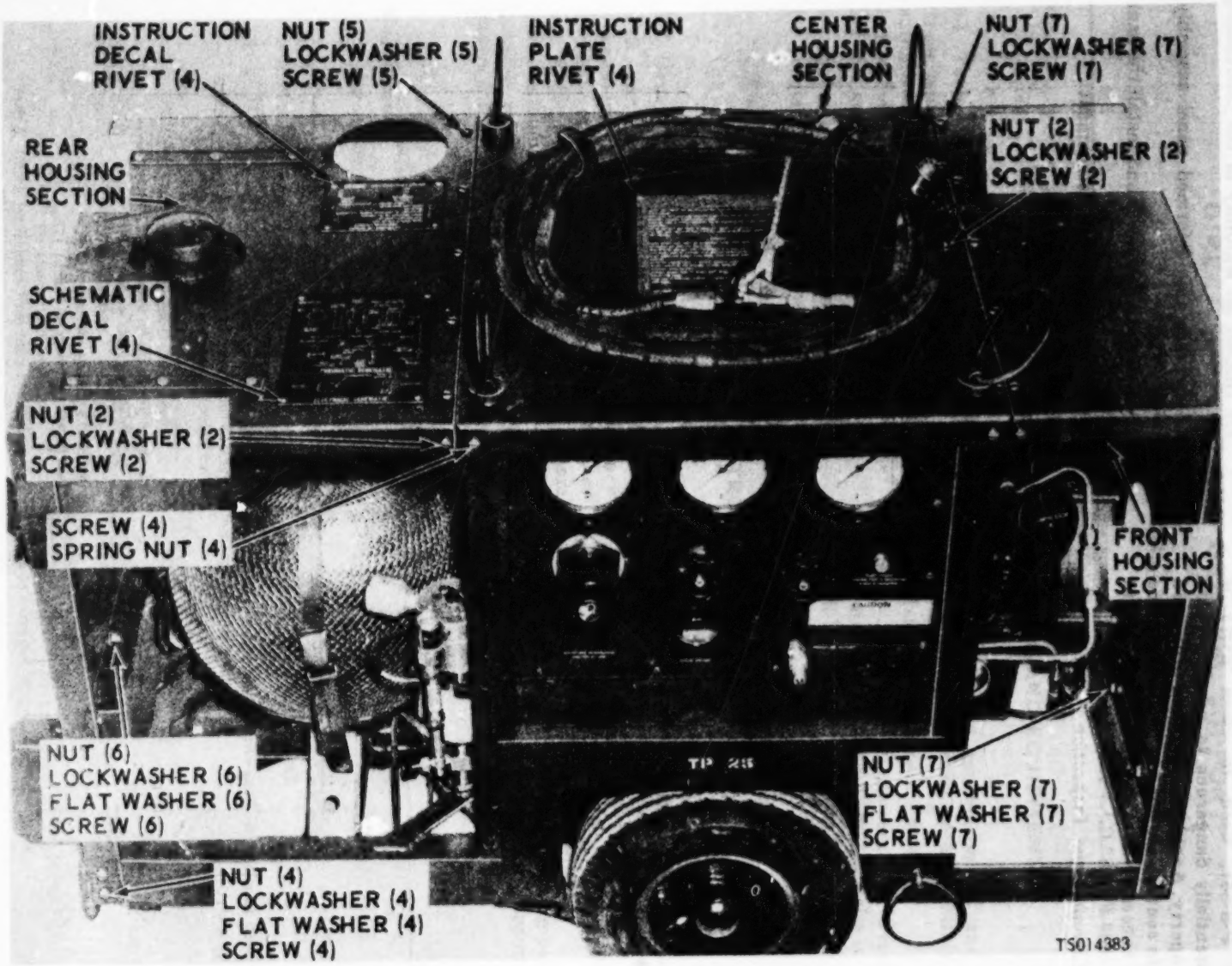

INSTRUCTION DECAL RIVET (4)
NUT (5) LOCKWASHER (5) SCREW (5)
INSTRUCTION PLATE RIVET (4)
CENTER HOUSING SECTION
NUT (7) LOCKWASHER (7) SCREW (7)
REAR HOUSING SECTION
NUT (2) LOCKWASHER (2) SCREW (2)
SCHEMATIC DECAL RIVET (4)
NUT (2) LOCKWASHER (2) SCREW (2)
SCREW (4) SPRING NUT (4)
FRONT HOUSING SECTION
NUT (6) LOCKWASHER (6) FLAT WASHER (6) SCREW (6)
NUT (7) LOCKWASHER (7) FLAT WASHER (7) SCREW (7)
NUT (4) LOCKWASHER (4) FLAT WASHER (4) SCREW (4)
TS014383

Figure 4-11. Housing sections, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) —138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean the panels with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect for legibility of the instructions plates.

(3) Replace any deformed panel assembly.

c. Installation.

(1) Refer to Figure 4-11 and install the panel assemblies.

(2) Install the towing attachment.

CHAPTER 5

DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

5-1. Tools and Equipment

Tools, equipment and repair parts issued with or authorized for the compressor assembly are listed in TM 5-4310-275-24P. Refer to TM 5-2805-257-24P for engine tools and equipment.

5-2. Special Tools and Equipment

No special tools and equipment are required to perform direct and general support and depot maintenance on the compressor assembly.

5-3. Maintenance Repair Parts

Repair parts and equipment are listed and illustrated in TM 5-4310-275-24P. Refer to TM 5-2805-257-24P for engine repair parts and equipment.

Section II. TROUBLESHOOTING

5-4. General

This section provides information useful in diagnosing and correcting unsatisfactory operation or failure of the compressor assembly or any of its components. Each trouble symptom stated is followed by a list of probable causes. The possible remedy recommended is described opposite the probable cause.

NOTE

Refer to TM 5-2802-257-14 for engine troubleshooting instructions.

5-5. Direct Support and General Support Maintenance Troubleshooting

Refer to Table 5-1 for troubleshooting pertaining to direct support and general support maintenance.

Table 5-1. TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION
1. INSUFFICIENT AIR FLOW, LOW OUTLET PRESSURE, OR EXCESSIVE PUMPUP TIME
Step 1. Inspect all connecting tubes and fittings for air leaks.
Tighten all connections, if the air leak continues, then replace the defective part with a similar item.
Step 2. Inspect the pressure relief valve for damage, defect (open) or escaping air.
Replace a defective pressure relief valve.
a. Removal.
(1) Disconnect all air lines.
(2) Remove all mounting hardware.
(3) Unscrew the relief valve.
b. Installation.
(1) Screw in the pressure relief valve.
(2) Install all mounting hardware.
(3) Connect all air lines.
Step 3. Check for leakage from the pneumatic dump valve due to damaged, dirty or defective parts.
Clean and/or replace the valve.
a. Removal.
(1) Depress push valve on the control panel to relieve air pressure.
(2) Remove the pressure relief valve, check valve, and back pressure valve.
(3) Remove the separator and filter assembly.

Table 5-1. Troubleshooting (Cont'd)

MALFUNCTION / TEST OR INSPECTION	CORRECTIVE ACTION
1. INSUFFICIENT AIR FLOW, LOW OUTLET PRESSURE, OR EXCESSIVE PUMPUP TIME—Continued	
	WARNING **Dry cleaning solvent P-D-680 used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F.—138°F. (39°C.—59°C.).**
	b. Cleaning. Clean the dump valve with dry cleaning solvent, Fed Spec P-D-680. *c. Installation.* (1) Screw the dump valve onto the separator assembly. (2) Install the separator and filter assembly. (3) Install the pressure relief, check valve, and back pressure valve.
Step 4. Inspect for ruptured discs in second or third stage cylinders, filter and separator, or safety fitting leaking or blown out.	Install new rupture disc(s). *a. Removal.* (1) Unscrew the disc holddown screw. (2) Remove the disc retainer ring from the cylinder cap. (3) Remove the defective disc. *b. Installation.* (1) Install the disc retainer ring in the cylinder cap. (2) Screw the disc holddown screw into place.
Step 5. Inspect for a partially closed shut-off valve to receiver.	Open valve.
Step 6. Check for a clogged line filter element.	Replace the element.
Step 7. Inspect for restricted air inlet to compressor first stage cylinder.	Remove the restriction.
Step 8. Check compressor for not operating at rated speed.	Engine governor not properly adjusted or engine operating erractically. See TM 5-2805-257-14.
2. EXCESSIVE OIL CONSUMPTION (Air Compressor)	
Step 1. Inspect for oil leaks.	Repair or replace parts as necessary.
Step 2. Inspect for excessive piston-to-cylinder-wall clearance.	Upon disassembly of the air compressor, inspect the clearance (see table 5-2) and replace as necessary.
3. AIR COMPRESSOR OVERHEATS	
Step 1. Check for low oil supply.	Replenish the oil supply.
Step 2. Inspect for insufficient or obstructed flow of cooling air.	Position the cart to provide adequate flow of air through louvers. Open access doors.
Step 3. Check for clogged fins on cylinders or tubing.	Clean thoroughly.
4. EXCESSIVE MOISTURE OR OIL VAPOR IN HIGH PRESSURE AIR	
Step 1. Inspect the desiccant container.	If the desiccant color has faded from the characteristic blue then discard. Unscrew the cap and lift out the desiccant container.
Step 2. Check for partially full or defective filter and separator assembly.	Press push valve to blow down condensate. Disassemble, clean, and replace parts in filter separator assembly. *a. Disassemble.* (1) Unscrew the pneumatic dump valve from the bottom of the separator shell. (2) Unscrew the tank cap from the top of the separator shell. (3) Remove screw and washer and then lift the filter element and gasket from the cap. *b. Assemble.* (1) Place the filter element and gasket in the cap and install the screw and washer. (2) Replace the tank cap on top of the separator shell. (3) Install the pneumatic dump valve on the bottom of the separator shell.

Section III. GENERAL MAINTENANCE

5-6. General

This section contains maintenance data pertinent to direct support and general support maintenance personnel. Refer to TM 5-2805-257-14 for engine data.

5-7. Repair and Replacement Standards

Table 5-2 lists manufacturer's desired clearances.

Table 5-2. Repair and Replacement Standards

Item	Original Dimensions		Wear Limits
First Stage Cylinder and Piston Assembly:			
Ring to cylinder wall clearance	0.0003	to 0.0005	0.0005
Wrist pin hole	0.3754	to 0.3756	0.0005
Wrist pin diameter	0.3751	to 0.3756	0.0005
Piston head clearance	0.021	to 0.026	
Second Stage Cylinder and Piston Assembly:			
Ring to cylinder wall clearance	0.0002	to 0.0004	0.0005
Wrist pin hole	0.4366	to 0.4368	0.0003
Wrist pin diameter	0.4364	to 0.4365	0.0005
Piston head clearance	0.002	to 0.006	
Poppet lift (nominal)	0.022		
Exhaust valve lift	0.024	to 0.030	
Third Stage Cylinder and Piston Assembly:			
Ring to cylinder wall clearance	0.00020	to 0.00025	0.0002
Wrist pin hole	0.4366	to 0.4368	0.0003
Wrist pin diameter	0.4363	to 0.4365	0.0005
Piston head clearance	0.002	to 0.006	
Poppet lift (nominal)	0.034		
Exhaust valve lift	0.024	to 0.030	
Compressor Connecting Links and Master Rod:			
Connecting link wrist pin bearing hole	0.5615	to 0.5620	0.0005
Master rod connecting link hole	0.4366	to 0.4368	0.0003
First stage wrist pin bearing hole	0.5590	to 0.5594	
Endbell:			
Shaft seal bore diameter	1.499	to 1.500	
Bearing bore diameter	1.8502	to 1.8505	0.0002
Compressor Shaft:			
Shaft seal diameter (fan end)	0.934	to 0.940	0.001
Bearing diameter (fan end)	0.9842	to 0.9845	0.0001
Master rod journal diameter	1.7711	to 1.7717	0.0005
Bearing diameter (opposite fan end)	1.1809	to 1.1811	0.0001
Shaft seal diameter (opposite fan end)	1.059	to 1.065	0.001
Oil Pump Piston:			
Large spherical diameter	0.5595	to 0.5605	0.0005
Small spherical diameter	0.3790	to 0.3795	0.0005
Oil Pump Cylinder:			
Inner diameter	0.360	to 0.362	0.002

Section V. REMOVAL AND INSTALLATION OF MAJOR COMPONENTS AND ASSEMBLIES

5-8. General

a. This section contains removal and installation instructions for major components which should be removed for repair functions.

b. Included in this section are the housing sections, air pressure tank, air compressor, engine, and the support stand assembly.

5-9. Housing Sections, Repair

a. Removal.

(1) Remove the fuel tank (fig. 4-1).

(2) Refer to Figure 4-11 and remove the housing sections.

b. Cleaning and Inspection.

(1) Clean the housing sections with water.

(2) Clean corroded areas with a wire brush and abrasive cloth.

(3) Inspect the decals for legibility.

c. Repair.

(1) Remove the illegible decals from the housing sections (fig. 4-11).

(2) Apply paint, olive drab color No. X24087, Federal Standard 595A, per MIL-T-704E, to the bare metal surfaces.

(3) Apply new decals to the positions indicated in Figure 4-11.

d. Installation.

(1) Refer to Figure 4-11 and install the housing sections in reverse sequence of removal.

(2) Install the fuel tank.

5-10. Air Pressure Tank Removal and Installation

a. Removal.

(1) Refer to Figure 5-1 and remove the air pressure tank.

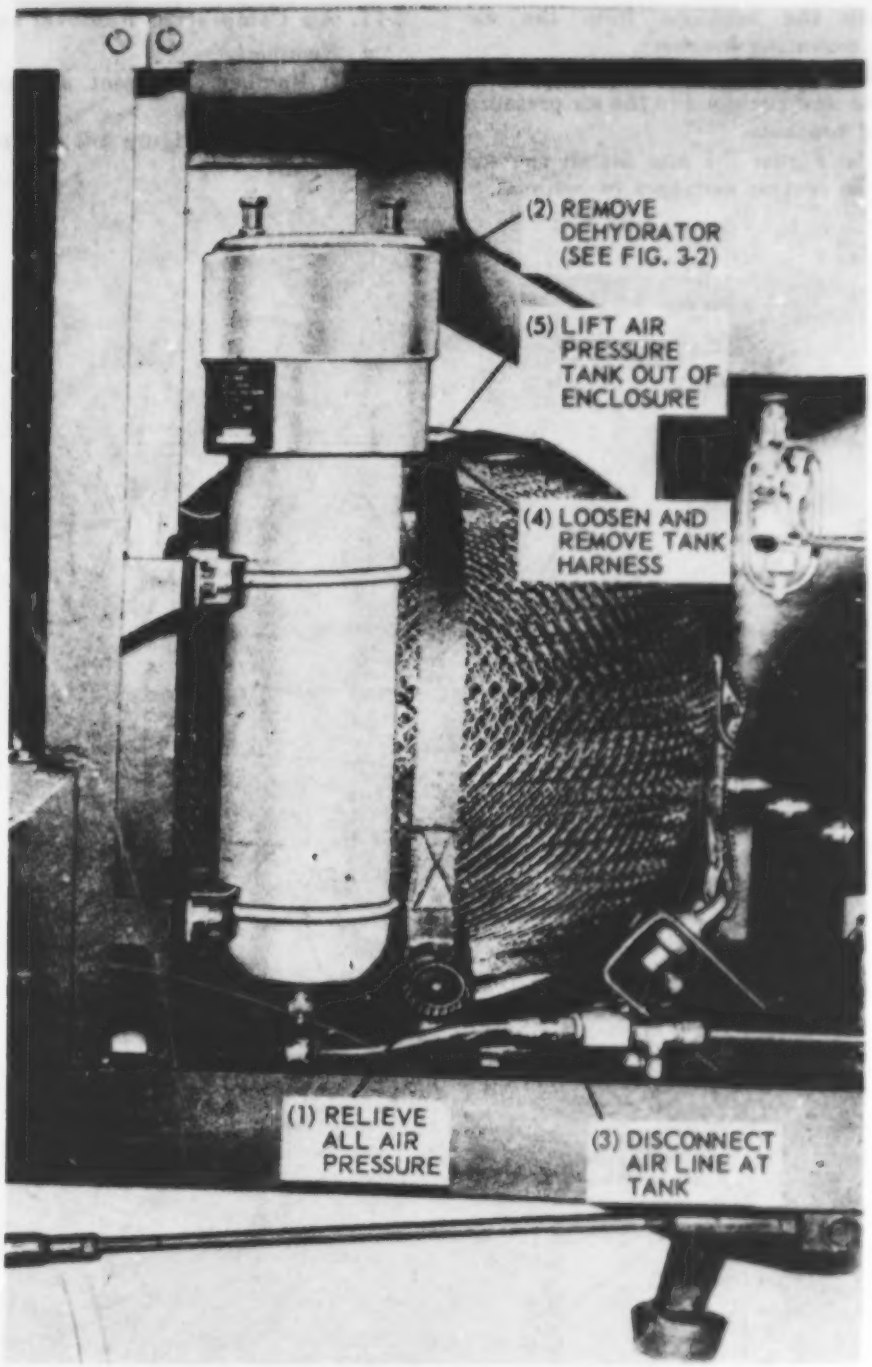

(2) REMOVE DEHYDRATOR (SEE FIG. 3-2)
(5) LIFT AIR PRESSURE TANK OUT OF ENCLOSURE
(4) LOOSEN AND REMOVE TANK HARNESS
(1) RELIEVE ALL AIR PRESSURE
(3) DISCONNECT AIR LINE AT TANK
TS014384

Figure 5-1. Air pressure tank, removal and installation.

(2) Remove the cushions from the air pressure tank mounting brackets.

b. Installation.

(1) Cement new cushions to the air pressure tank mounting brackets.

(2) Refer to Figure 5-1 and install the air pressure tank in reverse sequence of removal.

5-11. Air Compressor Removal and Installation

a. Removal.

(1) Remove the front and center housing sections (fig. 4-11).

(2) Refer to Figure 5-2 and remove the air compressor.

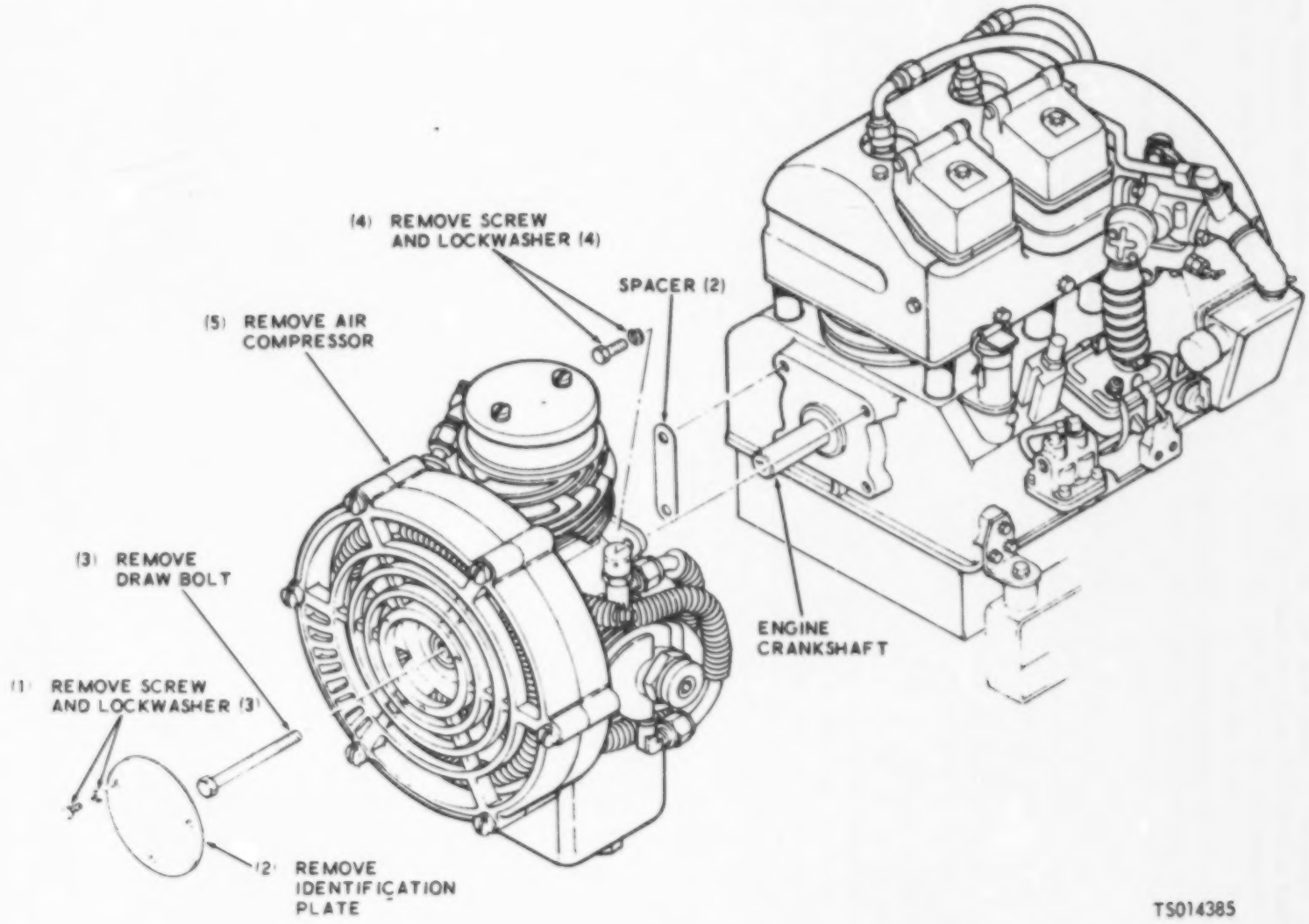


Figure 5-2. Air compressor, removal and installation.

b. Installation.

(1) Aline the air compressor with the engine crankshaft and carefully mate the units (fig. 5-2).

(2) Engage the draw bolt into the engine crankshaft but do not tighten.

(3) Install four capscrews and lockwashers through the air compressor mounting flange but do not tighten.

(4) Insert two spacers between the engine and air compressor mounting flanges. Tighten the four capscrews to secure the spacers.

(5) Tighten the draw bolt to a torque of 125 to 150 inch-pounds (1.4694 to 1.7288 kgm) torque.

(6) Loosen the four capscrews and remove the two spacers. Tighten the capscrews with equal torque.

(7) Install the housing sections.

c. Testing the Air Compressor.

(1) Start the compressor assembly.

(2) Apply a soap solution to all compressor seams and connections, and inspect for leakage. No leakage allowed at the operating range of 0 to 3000 psi (210.9000 kg per sq cm).

d. Compressor Run-In.

(1) Start the compressor assembly (para 2-3 *b.*).

(2) Open the reservoir by-pass valve (fig. 2-1).

(3) Operate the compressor against the pressure relief valve pressure for an accumulated operating time of 12 hours minimum.

NOTE

All operating time accumulated during other tests shall be included for the total run-in time, except that two hours must be accumulated with the compressor installed.

5-12. Engine Assembly Removal and Installation

a. Removal.

(1) Remove the housing sections (fig. 4-11).

(2) Remove the air compressor.

(3) Shut off fuel flow at the fuel shut-off valve (fig. 2-1).

(4) Refer to Figure 5-3, and remove the engine.

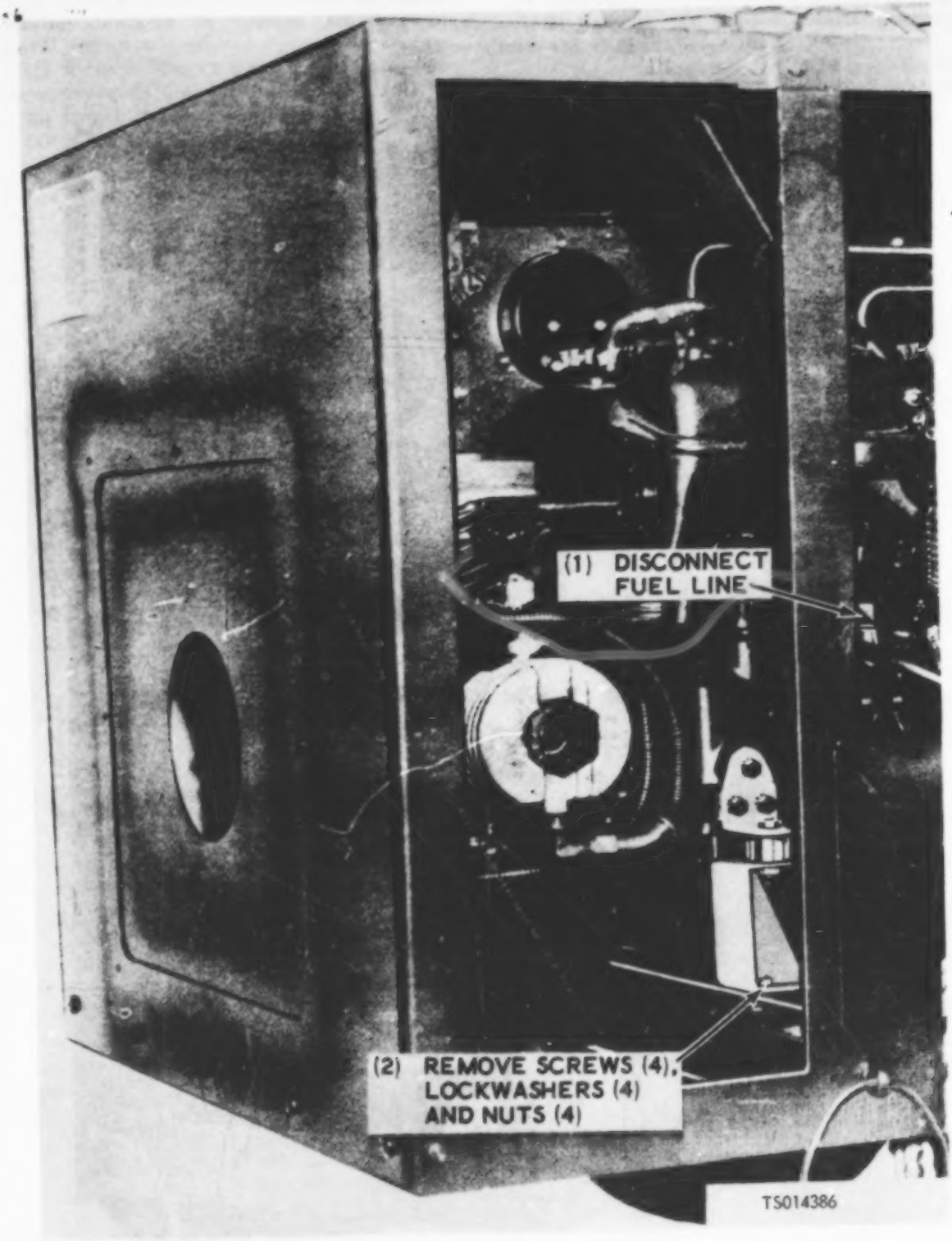


Figure 5-3. Engine assembly, removal and installation.

(5) Refer to Figure 5-4, and remove the engine mounting brackets.

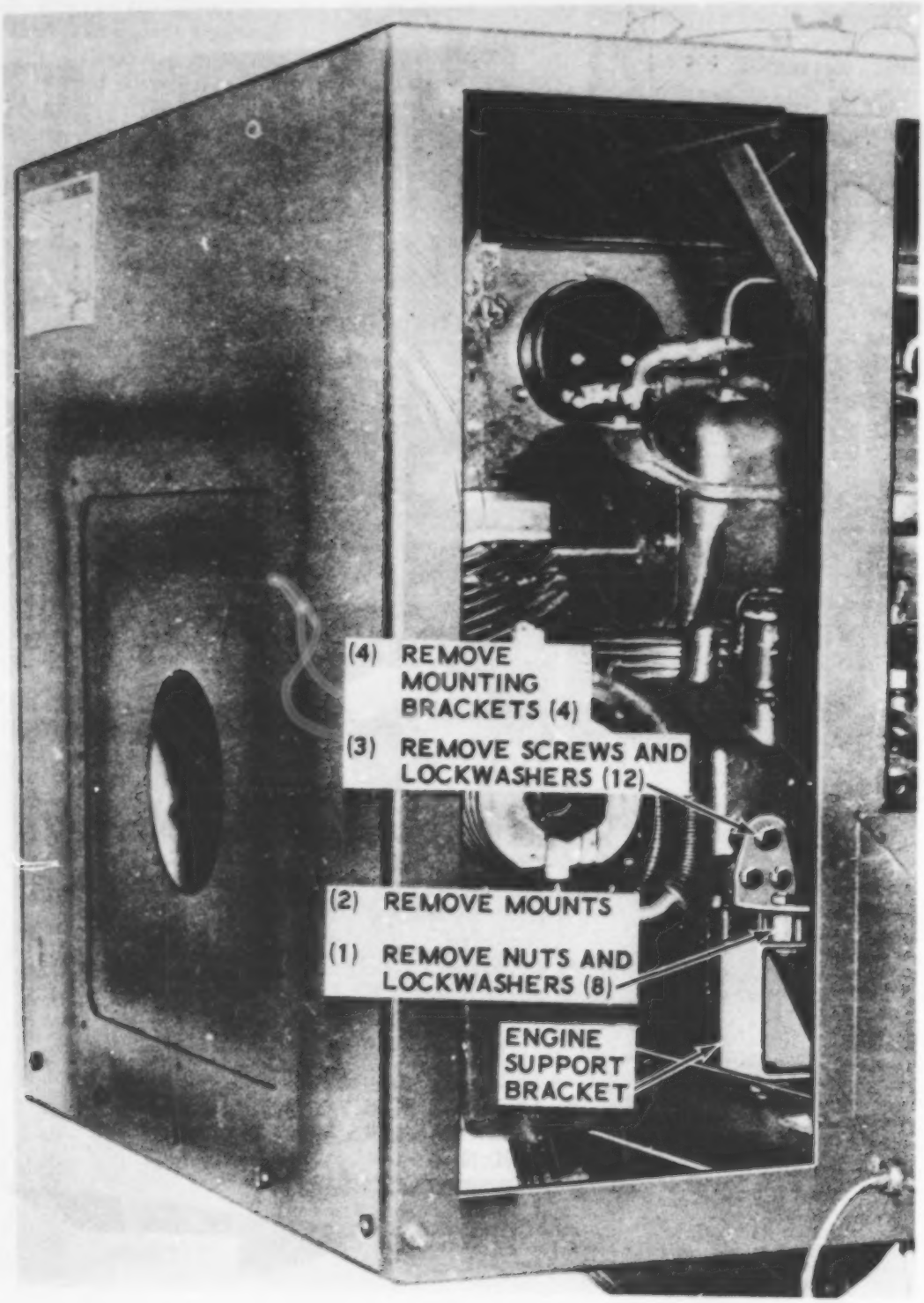

(4) REMOVE MOUNTING BRACKETS (4)
(3) REMOVE SCREWS AND LOCKWASHERS (12)
(2) REMOVE MOUNTS
(1) REMOVE NUTS AND LOCKWASHERS (8)
ENGINE SUPPORT BRACKET
TS014387

Figure 5-4. Engine mounting brackets, removal and installation.

b. Installation.

(1) Refer to Figure 5-4 and install the engine mounting brackets in reverse sequence of removal.

(2) Refer to Figure 5-3 and install the engine in reverse sequence of removal.

(3) Install the air compressor.

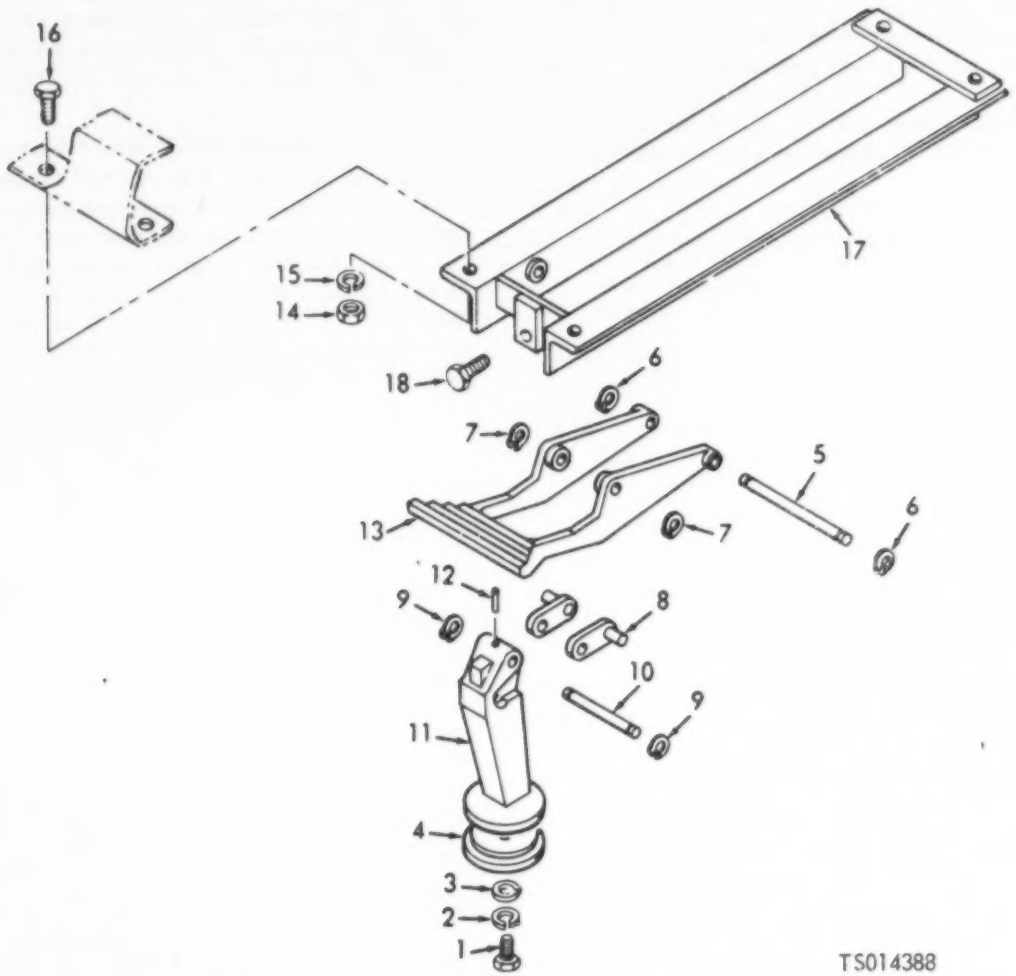
(4) Install the housing sections (fig. 4-11).

5-13. Support Stand Assembly Repair

a. Removal.

(1) Remove the support stand assembly from the chassis (fig. 4-10).

(2) Refer to Figure 5-5 and disassemble the support stand assembly in the sequence of the index numbers.



1. Screw
2. Lockwasher
3. Spacer
4. Base foot
5. Pedal pin
6. Retaining ring
7. Retaining ring
8. Link assembly
9. Retaining ring
10. Foot pin
11. Foot
12. Pin
13. Pedal
14. Nut
15. Lockwasher
16. Screw
17. Support
18. Screw

Figure 5-5. Support stand assembly, disassembly and reassembly.

b. Repair. Repair of the support stand assembly consists of replacement of defective parts.

c. Installation. Install the support stand assembly.

CHAPTER 6

PNEUMATIC SYSTEM REPAIR INSTRUCTIONS

Section I. VALVE ASSEMBLIES

6-1. General

This chapter contains the repairable assemblies used in the pneumatic system. They are the pressure relief valve, check valve, back pressure valve, pneumatic dump valve, and safety fitting assembly.

6-2. Pressure Relief Valve, Repair

a. General. Two pressure relief valves are used in the compressor assembly: one valve is installed in the cap of the filter and separator assembly; the other is installed in the high pressure line at the pressure tank inlet. The valves exhaust air to atmosphere at a pressure of 3200 to 3500 psig (224.96 to 246.05 kg per sq cm) and reseal when air pressure is less than 3100 psig (217.9300 kg per sq cm).

b. Removal. Remove pressure relief valve (paras 4-28 and 4-31).

c. Disassembly.

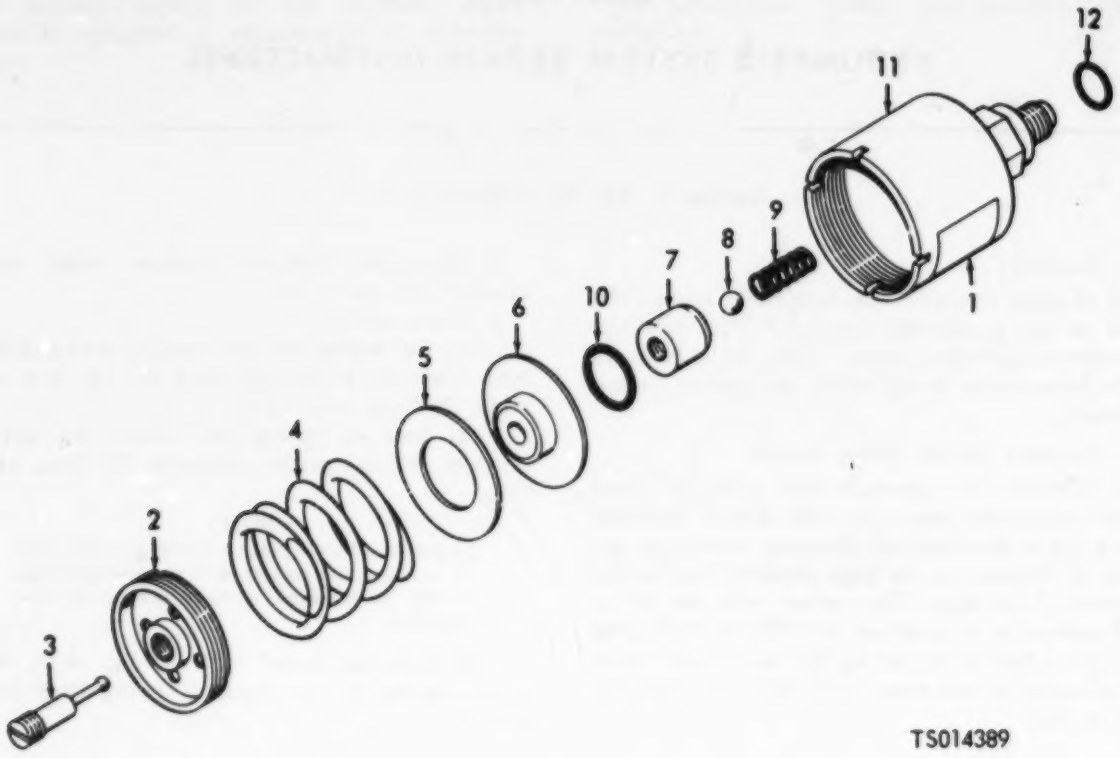
(1) Cut safety wire and remove wire and lead seal. Unscrew adjusting screw (2, fig. 6-1) and stem (3) from body (11).

(2) Remove spring (4), shims (5), spring retainer (6) and piston assembly (7) from body (11).

NOTE

Do not disassemble piston assembly (7). The parts are installed and crimped within the retainer and cannot be removed without destroying the assembly.

(3) Remove metal ball (8, fig. 6-1), ball return spring (9) and packing O-ring from body (11).



1. Identification plate
2. Adjusting screw
3. Stem
4. Spring
5. Spring shim
6. Spring retainer
7. Piston assembly
8. Ball
9. Spring
10. Preformed packing
11. Body
12. Gasket

Figure 6-1. Pressure relief valve, disassembly and reassembly.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) —138° F. (59° C.).

d. Cleaning and Inspection.

(1) Wash all parts with dry cleaning solvent, Fed. Spec. P-D-680, and dry thoroughly with clean, lint-free cloths. Use filtered, compressed air to blow solvent and residue from all crevices, springs, and air passages.

(2) Inspect parts for damaged screw threads, cracks, breaks, or worn areas in anodized surfaces, and other obvious indications of wear, damage and deterioration.

(3) Inspect finished surfaces of body, stem, adjusting screw and metal ball for scoring, scratches, nicks and signs of wear.

(4) Do not attempt to repair damaged or questionable parts. Discard all such items and install new parts during reassembly.

e. Reassembly. Refer to Figure 6-1 and assemble the pressure relief valve.

(1) Apply a thin film of pneumatic system grease (Specification MIL-G-4343) to new O-ring packing (10), packing groove in body (11), and mating surfaces of body and piston assembly (7).

(2) Insert O-ring packing (10) in groove in bore of body (11). Install ball return spring (9) and metal ball (8) in bore of body.

(3) Install piston assembly (7) in body (11) and down over metal ball (8) and spring (9).

(4) Insert spring retainer (6), cupped side against piston assembly (7, fig. 6-1).

(5) Place shims (5) and spring (4) in body

(11). Screw adjusting screw (2) into body. Screw stem (3) into adjusting screw.

f. Test and Adjustment.

(1) Install pressure relief valve in test setup as illustrated schematically in Figure 6-2. Be sure to observe dimensions specified for approach and exit sections.

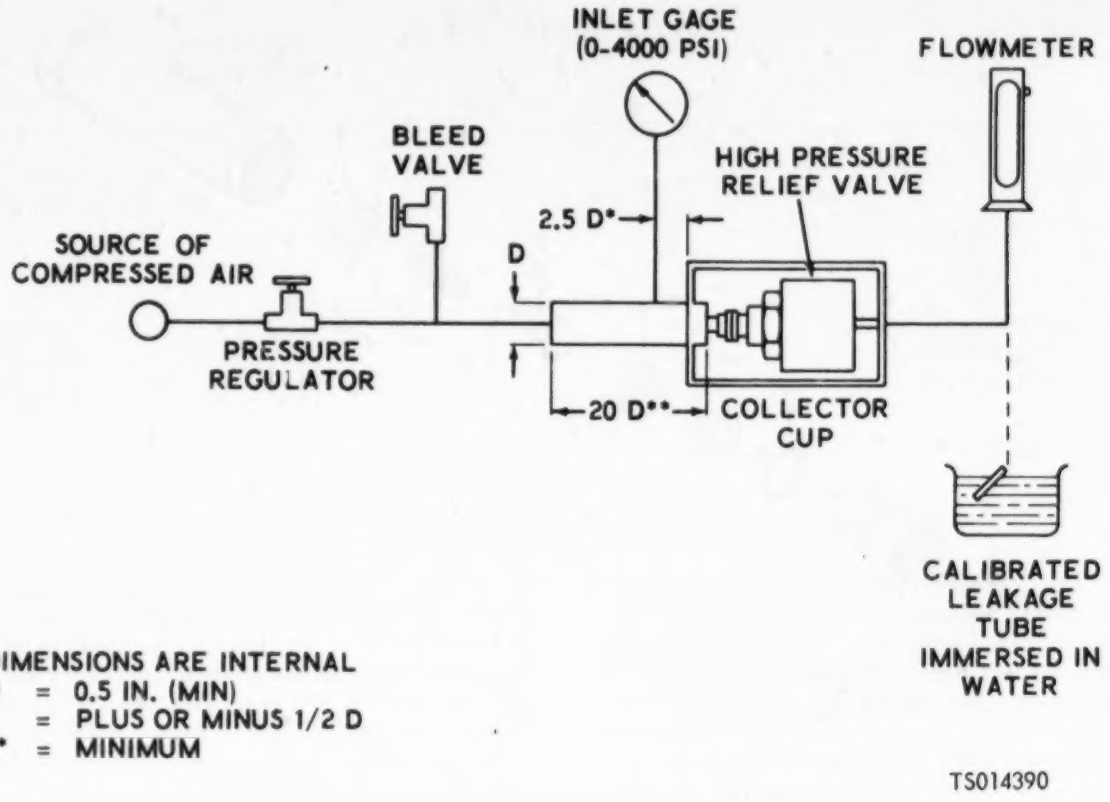


Figure 6-2. Pressure relief valve test setup.

(2) Close bleed valve. Adjust pressure regulator to apply a gradually increasing air pressure to approach section. Relief valve should open (i.e., air flow from leakage tube exceed three cubic centimeters per hour) before applied pressure reaches 3600 psig (253.08 kg per sq cm).

(3) If relief valve fails to open, remove collector cup, adjust stem of valve a small amount, replace collector cup, and repeat test. Repeat alternate adjustments and tests until relief valve opens, as indicated by a minimum air flow of 0.6 scfm, with an approach section pressure of 3300 to 3500 psig (231.990 to 246.05 kg per sq cm) maximum.

(4) Close pressure regulator and open bleed valve slightly to slowly relieve air pressure in approach section. Pressure relief valve should close (reseal) before approach section pressure drops below 3100 psi (217.9300 kg per sq cm) as indicated by pressure gage.

(5) If required relief valve operation cannot be obtained by adjusting stem, change setting of adjusting screw installed in valve body, and repeat complete test and adjustment procedure. Final setting of adjusting screw and stem must allow installation of 0.025 inch (.0635 cm) diameter stainless steel safety wire and lead seal as in original valve configuration.

(6) Close pressure regulator, open bleed valve to relieve air pressure in test setup and disconnect pressure relief valve from test equipment.

g. Installation.

(1) Install a new tube fitting gasket into the groove at the root of the valve body mounting boss (fig. 6-1).

(2) Install the pressure relief valve.

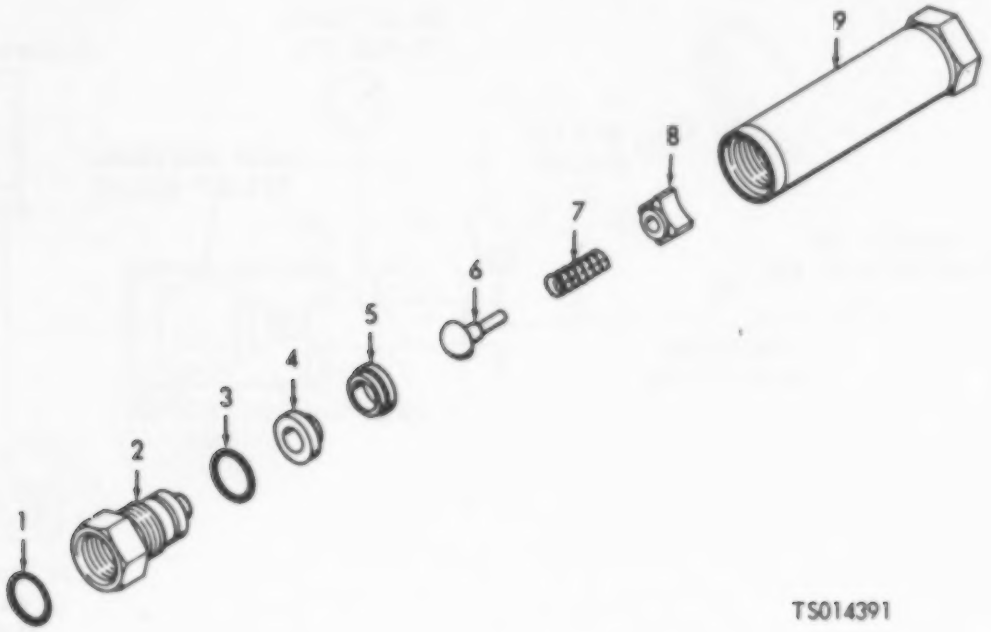
6-3. Check Valve, Repair

a. General. The check valve is installed in the

pneumatic system to prevent reverse air flow from the pressure tank.

b. Removal. Remove the check valve (para 4-31).

c. Disassembly. Refer to Figure 6-3 and disassemble the check valve in the sequence of the index numbers.



1. Gasket
2. Body screw
3. Preformed packing
4. Valve seat
5. Seat retainer
6. Poppet
7. Spring
8. Poppet guide
9. Valve body

Figure 6-3. Check valve, disassembly and reassembly.

WARNING

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d. Cleaning and Inspection.

(1) Wash all parts in dry cleaning solvent, Fed. Spec. P-D-680. Do not soak parts. Dry thoroughly with clean, filtered, compressed air or nitrogen.

(2) Inspect parts for evidence of damage and wear such as stripped screw threads, scratches and scoring of finished surfaces, nicks and burrs on valve surfaces.

(3) Check poppet return spring for deformation and damage. Spring must be cylindrical in shape with ends closed and square. Free length of spring should be 0.396 ± 0.005 inch (1.0058 ± .0127 cm).

(4) Discard all damaged, worn and questionable parts.

e. Reassembly.

(1) Apply a thin film of pneumatic system grease, Specification MIL-G-4343, to threads of body screw (2, fig. 6-3).

(2) Install poppet guide (8), spring (7), poppet (6), seat retainer (5) and valve seat (4) in valve body (9).

(3) Position O-ring packing (3) in groove of body screw (2). Screw body screw into valve body (9) and tighten with a torque of 600 ± 25 pound-inches (6.9702 ± .2904 kgm).

f. Test. Test the reassembled check valve as follows:

(1) Install the check valve in a test setup as shown in Figure 6-4.

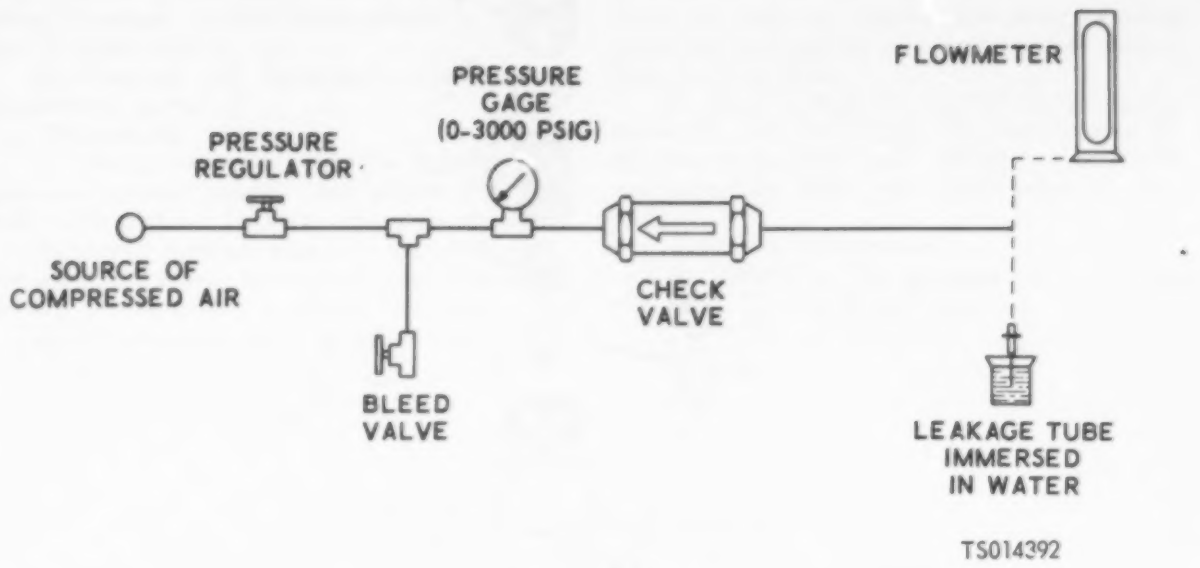


Figure 6-4. Check valve, test setup.

(2) Adjust pressure regulator to apply an air pressure of 3000 psig (210.9000.kg per sq cm) to outlet of check valve. Leakage, as indicated by air bubbles escaping from submerged leakage tube, shall not exceed three cubic centimeters per hour.

(3) With check valve connected, reduce applied air pressure to 5 psig (0.3515 kg per sq cm). Leakage shall not exceed three cubic centimeters per minute.

(4) Reverse test connections to check valve so free flow arrow points away from air supply.

(5) Slowly open pressure regulator until air flow through check valve exceeds three cubic centimeters per minute. This shall occur when applied pressure is from 2 to 8 psig (0.1406 to 0.5624 kg per sq cm).

g. Installation. Install the check valve.

6-4. Back Pressure Valve, Repair

a. General. The back pressure valves are installed in the discharge outlet of the separator and between the air line filter and the air pressure tank to maintain steady air pressure within the pneumatic system.

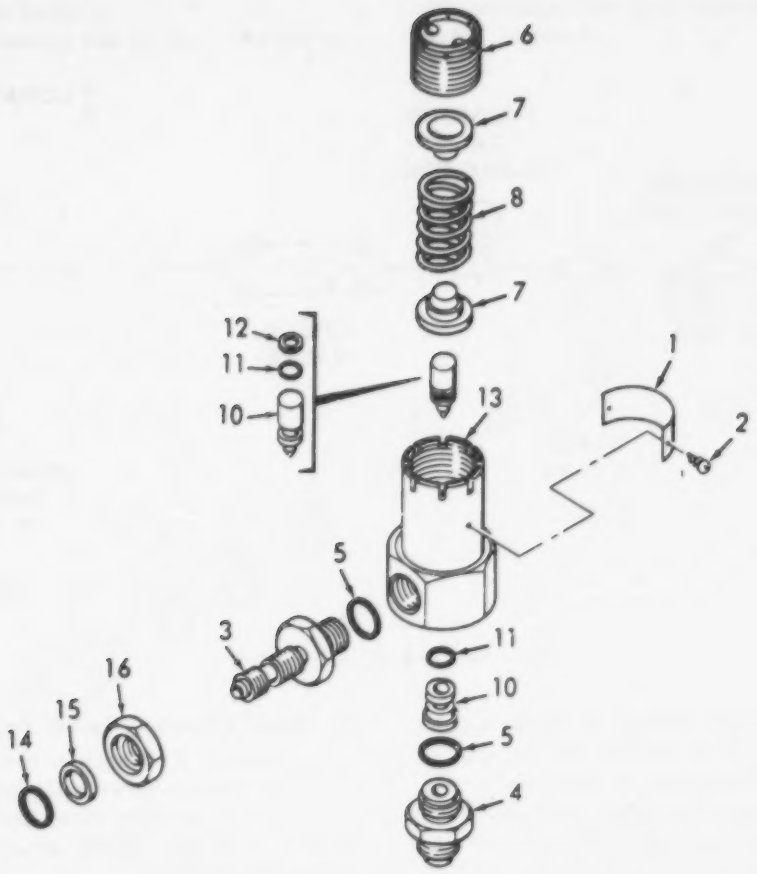
b. Removal. Remove the back pressure valve (para 4-31).

c. Disassembly.

(1) Remove inlet and outlet fittings (3 and 4, fig. 6-5) and tube fitting gaskets (5) from valve body (13).

(2) Unscrew valve cap (6) from top of valve body (13). Remove spring plates (7) and spring (8) from inside valve body.

(3) Remove piston (9) and piston seat (10) from inside valve body (13). Remove O-ring packings (11) and backup ring (12) from piston and valve seat.



1. Identification plate
2. Drive screw
3. Inlet fitting
4. Outlet fitting
5. Gasket
6. Valve cap
7. Spring plate
8. Spring
9. Piston
10. Piston seat
11. Preformed packing
12. Backup ring
13. Valve body
14. Gasket
15. Backup ring
16. Nut

Figure 6-5. Back pressure valve, disassembly and reassembly.

WARNING

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d. Cleaning and Inspection.

(1) Wash all parts in dry cleaning solvent, Fed. Spec. P-D-680, and dry thoroughly with filtered, compressed air or clean, lint-free cloths. Be sure all residue is removed from crevices and packing ring grooves.

(2) Inspect parts for evidence of damage and wear such as stripped screw threads, cracking of valve body, and finished surfaces that are scratched, scored or pitted.

(3) Make sure seat surface of piston is smooth and undamaged; mating surface of piston seat must be sharp and without nicks or other signs of wear or damage.

(4) Check spring for signs of set or out-of-round. Spring must be cylindrical in shape with

ends closed, square and ground. Length of spring with a load of 86 pounds (11.8938 kgm) plus or minus 10 pounds (1.3830 kgm) should be 0.687 inch (1.74498 cm).

(5) Discard all damaged, worn and questionable parts.

e. Reassembly.

(1) During reassembly, apply a light film of pneumatic system grease, Specification MIL-G-4343, to all gaskets, packings and male threads.

(2) Install backup ring (12, fig. 6-5) and packing (11) in groove of piston (9). Install second packing (11) in groove of piston seat (10).

(3) Install piston seat (10) and piston (9) in valve body (13).

(4) Position tube fitting gaskets (5) in grooves of inlet and outlet fittings (3 and 4). Screw fittings into appropriate ports of valve body (13) and tighten to a torque of 45 pound-inches (.5394 kgm).

(5) Place spring (8), flanked by two spring plates (7), into valve body (13). Screw valve cap (6) into valve body until top surface of cap is approximately flush with upper edge of valve body.

f. Test and Adjustment.

(1) Install the back pressure valve into the test setup illustrated in Figure 6-6.

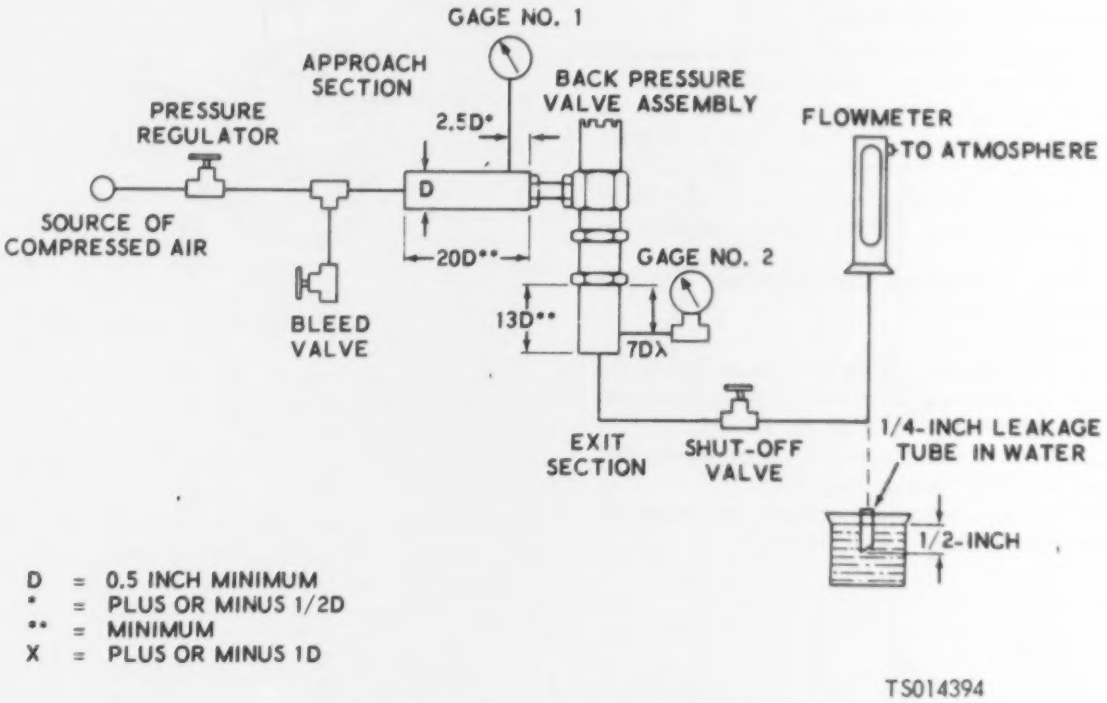

Figure 6-6. Back pressure valve test setup.

(2) Open the shut-off valve fully. Open the pressure regulator to gradually increase inlet pressure until the flowmeter indicates a flow of 2.0 scfm, to test for full flow pressure. With the flow as specified, the inlet pressure, gage No. 1, shall be 2550 to 2700 psig (182.7800 to 193.3250 kg per sq cm).

(3) To test for full flow with back pressure, adjust the pressure regulator and the shut-off valve until the outlet pressure, gage No. 2, is 2400 psig (168.7200 kg per sq cm) and the flowmeter indicates a flow of 2.0 scfm. With the outlet pressure as specified the inlet pressure shall not exceed 2450 psig (172.2350 kg per sq cm) as indicated at gage No. 1.

(4) Fully open the shut-off valve. Starting with zero inlet pressure, open the pressure regulator to gradually increase inlet pressure to 2000 psig (154.6600 kg per sq cm). With the inlet pressure as specified leakage through the back pressure valve shall not exceed 5.0 cc/min., as indicated by the flowmeter.

(5) With the shut-off valve fully open, adjust the pressure regulator for inlet pressure of 2750

psig (196.8400 kg per sq cm). Close pressure regulator to decrease the inlet pressure to 2000 psig (154.6600 kg per sq cm). With the inlet pressure decreased as specified, leakage through the back pressure valve shall not exceed 0.15 scfm as indicated by the flowmeter.

(6) Close the shut-off valve and adjust the pressure regulator to increase inlet and outlet pressure to 4500 psig (316.3500 kg per sq cm). Apply a soap solution to the back pressure valve to detect external leakage allowed.

Section II. FILTERING ASSEMBLIES

6-5. General

Two separate filtering assemblies are installed in the pneumatic system to eliminate moisture and oil vapors from the compressed air. They are the filter and separator assembly connected directly to the compressor, and the dehydrator unit installed near the receiver tank.

6-6. Dehydrator Unit, Repair

a.. General. The dehydrator unit is a chemical drier which supplements the separator and filter assembly in removal of moisture from the air. A replaceable desiccant cartridge, with a characteristic blue color, absorbs moisture from the air. As the cartridge absorbs moisture, the blue fades to indicate that a replacement cartridge is required.

b. Removal. Remove the dehydrator unit and cartridge (fig. 3-2).

c. Disassembly.

(1) Unscrew cap (22, fig. 6-7) and remove the cap, perforator head (21), cartridge seal retainer (17), and perforators (11) as an assembly.

(2) Remove and discard preformed packings (19 and 15) and backup ring (20).

(3) If cap assembly repair is required, disassemble as shown in Figure 6-7.

(4) Lift desiccant cartridge (3) out of the housing (7) and replace if the blue coloring has faded.

(5) Remove screw (4) and perforator assembly (5) if repair is required.

KEY to Figure 6-7.
1. Lug screw
2. Cover
3. Desiccant cartridge
4. Screw
5. Perforator assembly
6. Spacer
7. Housing
8. Gasket
9. Adapter
10. Screw
11. Perforator
12. Nut
13. Disc
14. Lock nut
15. Performed packing
16. Screw
17. Seal retainer
18. Spring
19. Preformed packing
20. Backup ring
21. Perforator head
22. Cap
23. Retaining ring

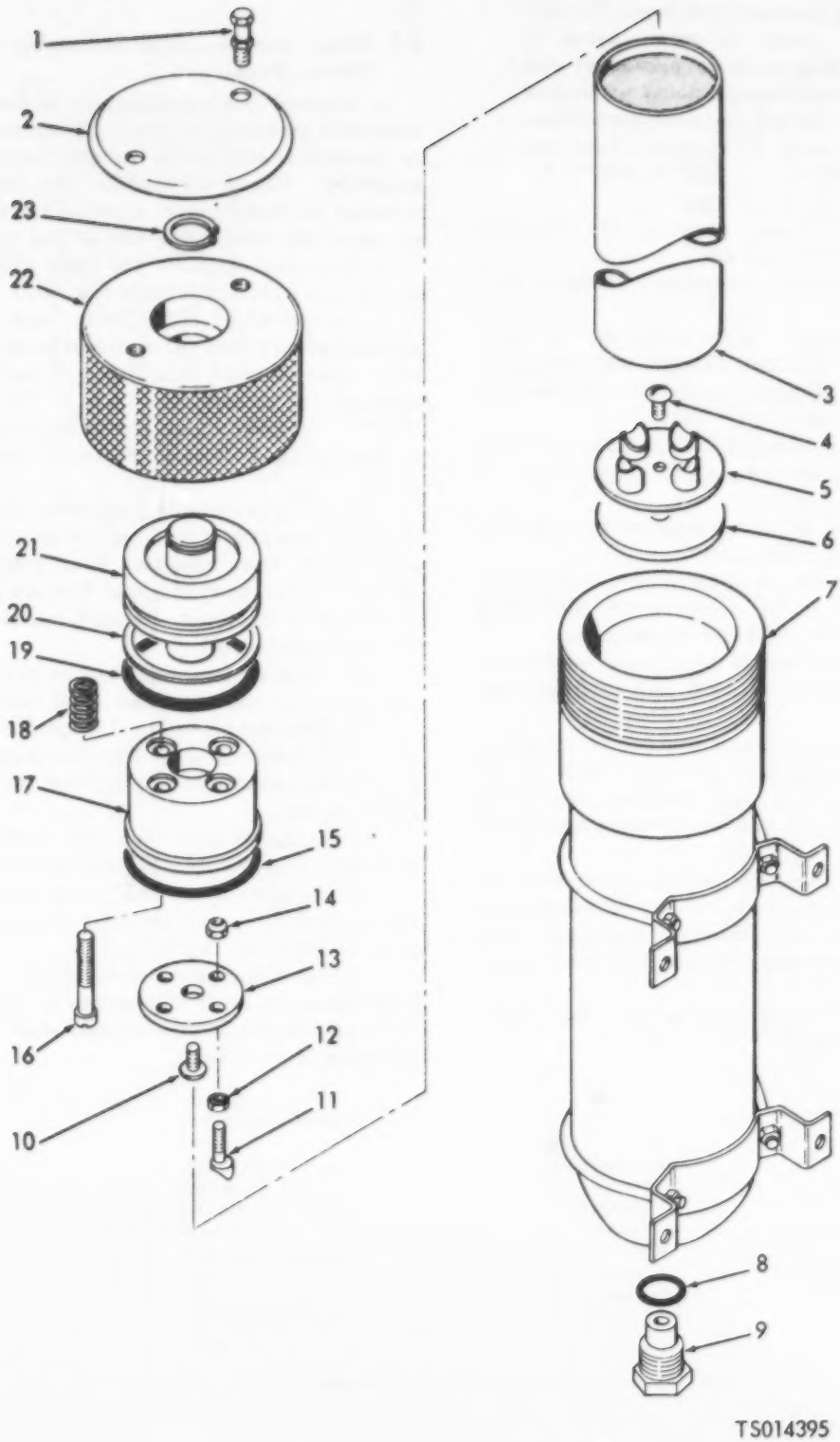

Figure 6-7. Dehydrator and separator, disassembly and reassembly.

WARNING

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d. Cleaning and Inspection.

(1) Wash all metal parts in dry cleaning solvent, Fed. Spec. P-D-680.

(2) Dry the parts thoroughly with clean, lint-free cloths.

(3) Use filtered, compressed air to blow residue from all crevices, threads and passages.

(4) Inspect all parts for cracks, deformation, and stripped threads.

e. Reassembly. Reassemble the dehydrator in reverse sequence of disassembly ((fig. 6-7).

f. Testing.

(1) Seal port in outlet adapter with an appropriate pressure plug.

(2) Connect source of clean, dry compressed air or nitrogen at a pressure of 3000 spig (210.9000 kg per sq cm) to port in inlet cap.

(3) Slowly pressurize dehydrator housing to a maximum pressure of 3000 psig (210.9000 kg per sq cm).

(4) Brush a soap-water solution on all joints and seams of dehydrator housing. Check for air leaks as evidenced by air bubbles. Maximum allowable leakage is two cubic centimeters per hour.

(5) After completing leakage test, wipe all soap-water solution from surface of dehydrator housing. Relieve air pressure, disconnect test equipment and remove pressure plug from outlet adapter.

(6) Remove outlet adapter cap and install dehydrator cartridge.

g. Installation. Install the dehydrator (fig. 3-2).

6-7. Filter and Separator Assembly and Dump Valve, Repair

a. General. High pressure air in the filter and separator assembly causes moisture and oil vapor to condense and settle to the bottom of the assembly. These impurities are removed by opening the dump valve, allowing the air pressure to force the condensate out of the unit.

b. Removal. Remove the filter and separator and dump valve as a unit (fig. 4-7).

c. Disassembly. The filter and separator assembly and dump valve should be disassembled only when obvious indications of malfunction or damage are present (see Item 4, Table 5-1).

(1) Unscrew pneumatic dump valve (items 1 through 6, fig. 6-8) from bottom of separator shell (23).

(2) To disassemble pneumatic dump valve, unscrew adapter (1) from body (9), remove packing (2) from adapter. Drop piston (3) and spring (5) from bore of body. Remove packing (4) from groove in piston. Remove retainer (6), seat (7) and packing (8).

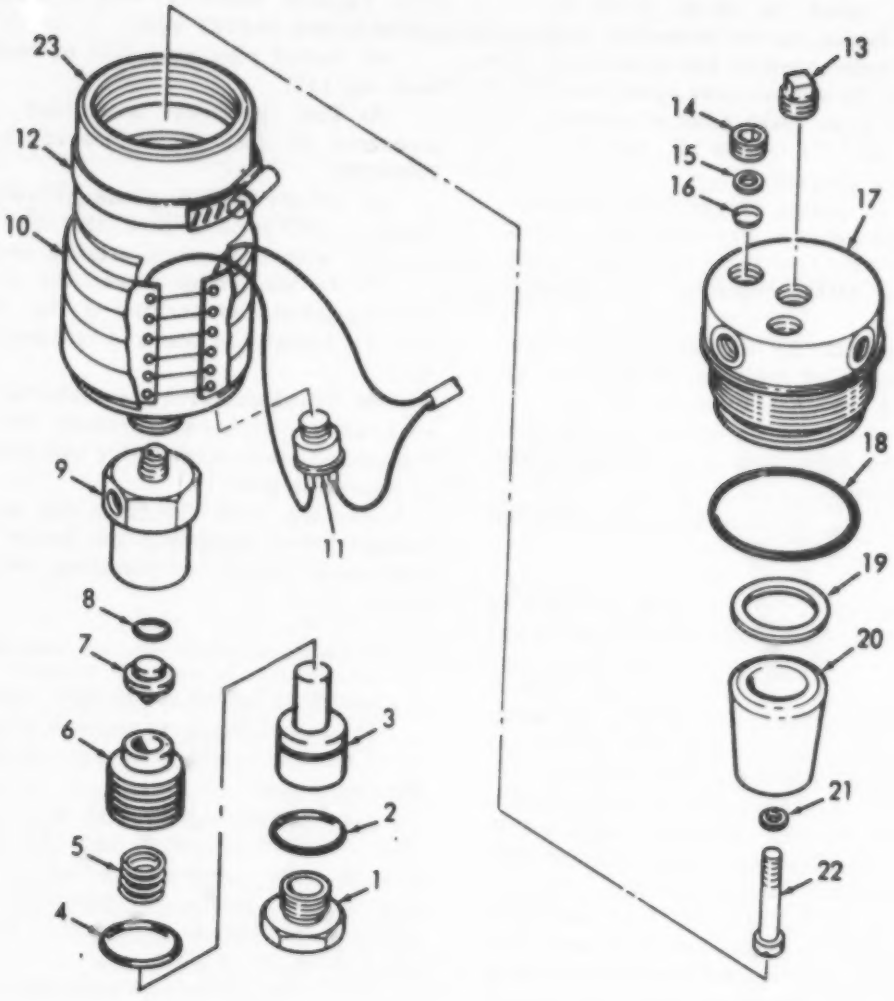
(3) Unwrap tape and remove heater blanket (10) from around separator shell (23).

(4) Remove pipe plug (13, fig. 6-8) from tank cap (17). Unscrew disc ring retainers (14) and remove disc rings (15) and rupture discs (16) from ports in cap.

(5) Unscrew tank cap (17) from separator shell (23). Slip gasket (18) from groove in cap.

(6) Remove screw and plug assembly (22) and washer (21) and lift filter element (20) and gasket (19) from cap (17).

(7) Do not remove thermostat switch (11) from recess in shell (23) unless a new switch is required. Switch is pressed into shell and will be unusable if removed.



1. Adapter
2. Preformed packing
3. Piston
4. Preformed packing
5. Spring
6. Retainer
7. Seat
8. Preformed packing
9. Body
10. Heater blanket
11. Thermostat switch
12. Clamp
13. Plug
14. Disc ring retainer
15. Disc ring
16. Rupture disc
17. Cap
18. Gasket
19. Gasket
20. Element
21. Washer
22. Screw and plug
23. Shell

Figure 6-8. Separator and filter assembly, disassembly and reassembly.

WARNING

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d. Cleaning and Inspection.

(1) Wash all parts, except filter element, packings and gaskets, in dry cleaning solvent, Fed. Spec. P-D-680. Dry parts thoroughly with clean, lint-free cloths and//or low-pressure compressed air.

(2) Inspect parts for scoring, pitting, wear and other evidence of damage. Make sure all drilled passages are unobstructed.

(3) Check operation of heater blanket and thermostat switch against performance requirements listed:

Manufacturer	Stewart-Warner Corporation
Filter element	
Rupture disc	
burst pressure	4500 to 5000 psig (316.3500) to 351.5000 kg per sq cm)
Heater blanket:	
Voltage	27 volts dc
Power	140 watts
Thermoswitch:	
Contacts open	75° ± 5°F. (24° ± 5°C.)
Contacts close	45° ± 7°F. (70° ± 7°C.)

e. Reassembly.

(1) Position gasket (19, fig. 6-8) and filter elements (20) against inner surface of tank cap (17) and secure in position with washer (21) and new screw and plug assembly (22).

(2) Lubricate gasket (18) with pneumatic system grease, Specification MIL-G-4343, and place gasket in groove around tank cap (17). Screw cap into shell (23) until seam is closed.

(3) Install rupture discs (16), disc rings (15) and disc ring retainers (14) in ports in tank cap (17). Tighten retainers with a torque of 350 pound-inches (4.0522 kgm).

(4) Install pipe plug (13) in center port of tank cap (17).

(5) Test partially assembled filter and separator for leakage, before continuing with assembly.

(6) After completing leakage test, wrap heat blanket (10) around shell (23) and secure in position with tape as in original configuration.

(7) To reassemble pneumatic dump valve, position lubricated packing (8, fig. 6-8) on the seat (7). Install the seat and retainer (6) in body (9).

(8) Test assembled pneumatic dump valve in accordance with instructions below. After completing tests, screw valve into port at bottom of separator shell.

f. Testing. Test the filter and separator for leakage before attaching the heater blanket or thermostat switch, or installing the pneumatic dump valve.

NOTE

If thermostat switch was not removed during disassembly, it must be protected against moisture by covering with waterproof tape.

(1) Install pressure plugs in all ports except one. Connect variable source of compressed air to remaining port.

(2) Pressurize filter and separator to 3000 psig (210.9000 kg per sq cm). While maintining this internal pressure, brush a soap-water solution on joints of assembly. Maximum allowable leakage, as evidenced by air bubbles, is one bubble per minute.

(3) If leakage rate exceeds one air bubble per minute, disassemble filter and separator and install new packing on cap.

(4) Install the dump valve into a test setup as shown in Figure 6-9.

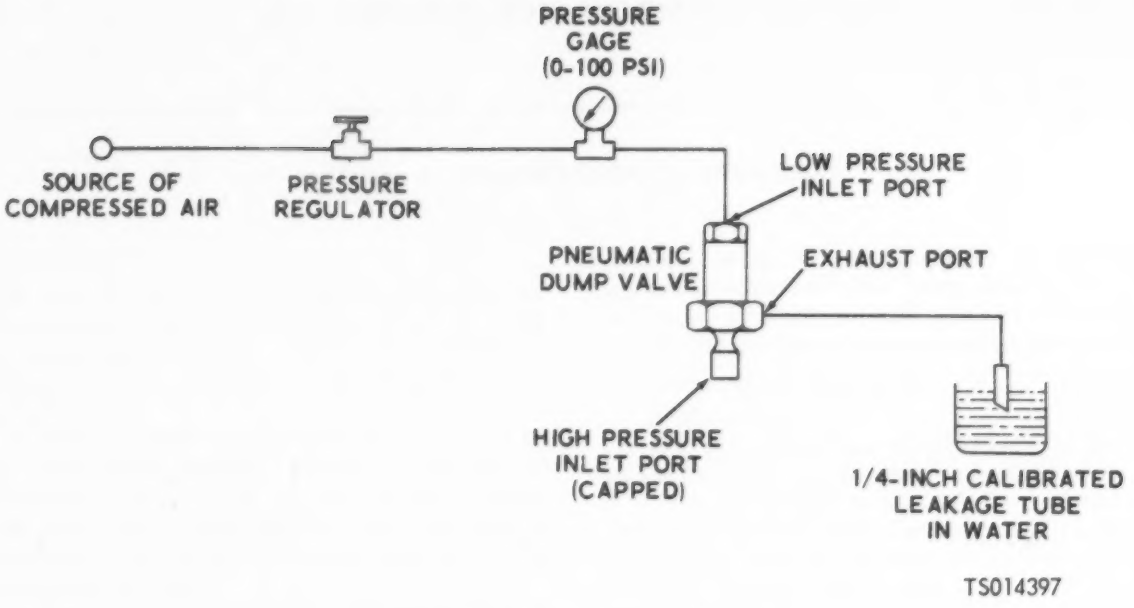


Figure 6-9. Pneumatic dump valve test setup.

(5) Adjust pressure regulator to apply a pressure to 60 to 65 psig (4.2180 to 4.5695 kg per sq cm) to low pressure inlet port.

(6) Leakage from exhaust port shall not exceed three cubic centimeters per hour (one air bubble every two minutes).

(7) Use same test setup as illustrated in Figure 6-9, except disconnect leakage tube from exhaust port and connect an adjustable source of high pressure compressed air to high pressure inlet port of pneumatic dump valve.

(8) With an air pressure of 60 to 65 psig (4.2180 to 4.5695 kg per sq cm) applied to low pressure inlet port, apply a gradually increasing air pressure to high pressure inlet port. Increase pressure to 3300 ±50 psig (231.9900 ±3.5150 kg per sq cm), then shut off high pressure air supply.

(9) Piston in pneumatic dump valve should remain closed to maintain high inlet air pressure. When it is evident that piston is closed, connect a flowmeter to dump valve exhaust port. Measured leakage shall not exceed five cubic inches per minute.

(10) After completing tests, relieve air pressure in test setup, disconnect pneumatic dump valve and install on filter and separator assembly.

g. Installation. Install the separator and filter assembly and dump valve (fig. 4-7).

CHAPTER 7

AIR COMPRESSOR ASSEMBLY REPAIR

Section I. COMPRESSOR COMPONENTS

7-1. General

a. This section contains repair instructions for components which are externally attached to the air compressor. These items are: aftercooler assembly, fan assembly, and the intercooler assembly.

b. High pressure compressed air is routed from the third stage cylinder through the aftercooler assembly. Cooling fins on the tubing dissipate heat from the compressed air. The assembly is attached to the fan guard in a position to receive maximum air flow.

c. The fan is attached to the crankshaft to provide cooling air for the cylinders and the intercooler and aftercooler assemblies.

d. The two intercooler assemblies connect the first stage cylinder to the second stage cylinder, and the second stage cylinder to the third stage cylinder. Cooling fins are spaced on each assembly to dissipate heat from the compressed air as the air flows from one stage to the other.

7-2. Aftercooler Assembly

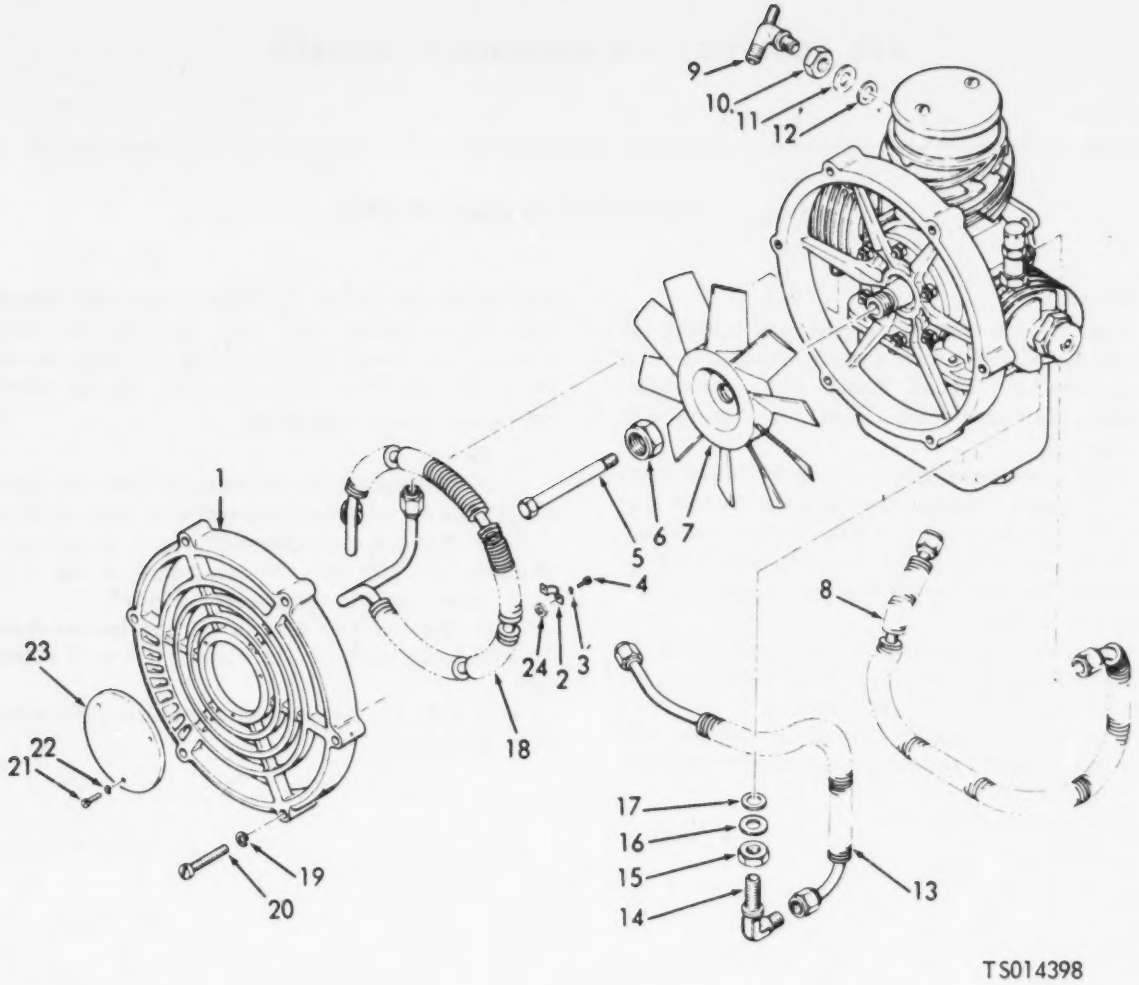
a. Removal.

(1) Disconnect the aftercooler from the third stage cylinder and the separator and filter air line.

(2) Remove six screws (20, fig. 7-1) and lockwashers (19) and pull the fan guard (1, fig. 7-1) away from the air compressor endbell.

(3) Remove two screws (4) and lockwashers (3) attaching each of six clamps (2) and shims (24).

(4) Pull the aftercooler assembly (18) away from the guard.



1. Fan guard
2. Clamp
3. Lockwasher
4. Screw
5. Draw bolt
6. Nut
7. Fan
8. First to second stage intercooler
9. Tee-elbow assembly
10. Nut
11. Seal
12. Gasket
13. Second to third stage intercooler assembly
14. Elbow
15. Nut
16. Gasket
17. Seal
18. Aftercooler assembly
19. Lockwasher
20. Screw
21. Screw
22. Lockwasher
23. Identification plate
24. Shim

Figure 7-1. Intercooler assembly, aftercooler assembly and fan assembly, removal and installation.

WARNING

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b. Cleaning and Inspection.

(1) Clean the exterior surfaces of the aftercooler assembly with dry cleaning solvent, Fed. Specification P-D-680. Use compressed air to clean residue from the fins.

(2) Inspect for damaged threads, cracks, and missing fins.

(3) Straighten bent fins.

(4) Replace a damaged aftercooler assembly.

c. Installation.

(1) Attach the aftercooler assembly (18, fig. 7-1) to the fan guard (1) with shims (24), six clamps (2), and twelve screws (4, fig. 7-1) and lockwashers (3).

(2) Attach the fan guard to the compressor endbell with six screws (20) and lockwashers (19).

(3) Connect the aftercooler assembly to the third stage cylinder and the separator and filter air line.

7-3. Fan Assembly

a. Removal.

(1) Remove the aftercooler assembly.

(2) Remove nut (6, fig. 7-1) and bolt (5). Pull the fan (7) off the crankshaft.

WARNING

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b. Cleaning and Inspection.

(1) Clean the fan with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect the fan for bent or cracked blades.

(3) Replace a defective fan.

c. Installation.

(1) Place the fan (7, fig. 7-1) on the end of the crankshaft.

(2) Install bolt (5) and nut (6).

(3) Install the aftercooler assembly.

7-4. Intercooler Assembly

a. Removal. Disconnect the intercooler assemblies at the applicable cylinder ports (fig. 7-1).

WARNING

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b. Cleaning and Inspection.

(1) Clean the exterior surfaces with dry cleaning solvent, Fed. Spec. P-D-680. Clean residue from the fins with compressed air.

(2) Inspect for cracks, damaged threads and missing fins.

(3) Straighten bent fins.

(4) Replace all seals and gaskets and effective parts.

c. Installation. Connect the intercooler assemblies to the applicable cylinder ports (fig. 7-1).

Section II. AIR COMPRESSOR

7-5. Air Compressor

a. The air compressor assembly consists of three cylinder and piston assemblies mounted radially on a crankcase and pneumatically connected in series. The pistons are attached to, and actuated by, a master connecting rod mounted on a crankshaft which extends axially through the crankcase. One end of the shaft couples directly to the engine crankshaft, and the opposite end extends through the crankcase endbell and mounts a multiple blade fan which blows cooling air past the cylinders and intercooler and aftercooler assemblies.

b. Many repair parts for air compressor overhaul are provided in kits. Replace all parts removed in disassembly, regardless of condition, with all like parts furnished in the kits. See TM 5-4310-275-24P for a listing of the kits.

7-6. First Stage Cylinder, Pistons and Valves

a. Removal.

(1) Disconnect the intercooler assembly (fig. 7-1).

(2) Remove the attaching screws (1, fig. 7-2), lockwashers (2) and lift intake cover (3) and filter (5) from cylinder head (9). Remove and discard gaskets (4).

(3) Remove flat head screws (8) and lift first stage cylinder head (9), gaskets (17), and complete valve mechanism (items 6 through 18, less items 8 and 17) free of the first stage cylinder.

(4) Remove valve retainer screw (18), nut (6), and flatwasher (7), and separate intake valve spring (16), intake valve (15), valve plate (14), exhaust valve (13), exhaust valve spring (12), valve stop (11, fig. 7-2), and packing (10) from the first stage cylinder head.

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(5) Unscrew four nuts (20) and slip first stage cylinder (19) over the piston. Remove and discard the cylinder gaskets (24) and shim (25).

(6) Remove two retaining rings (21) and push the piston pin (22) out of the piston (23) and the master rod. Identify the side of the piston toward the fan end of the crankcase to ensure proper re-installation by scribing a mark inside of the piston skirt.

KEY to Figure 7-2.

1. Screw
2. Lockwasher
3. Cover
4. Gasket
5. Filter
6. Locknut
7. Flatwasher
8. Screw
9. Cylinder head
10. Preformed packing
11. Valve stop
12. Valve spring
13. Exhaust valve
14. Valve plate
15. Intake valve
16. Valve spring
17. Gasket
18. Screw
19. Cylinder
20. Nut
21. Retaining ring
22. Piston pin
23. Piston
24. Gasket
25. Shim

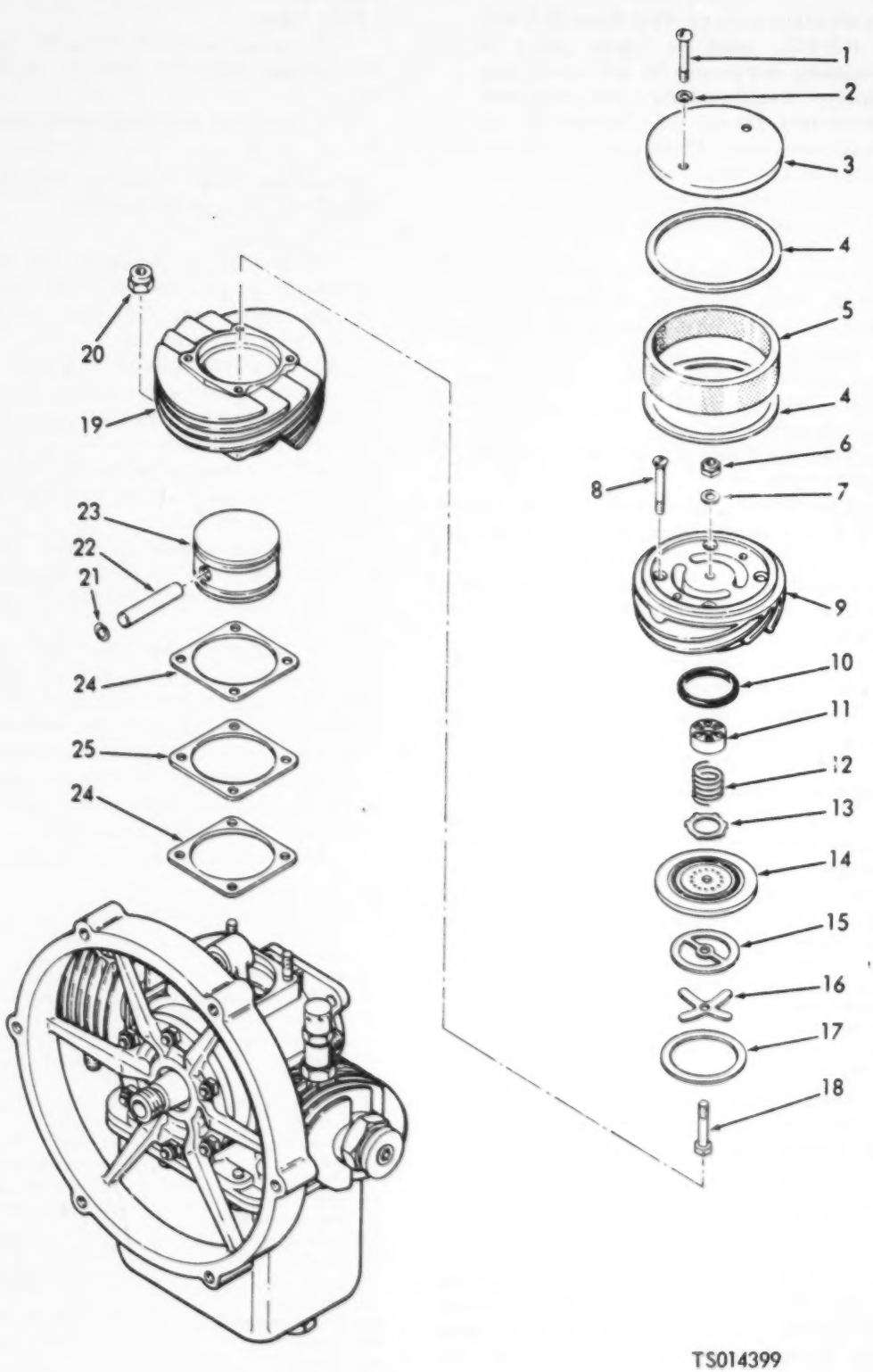

Figure 7-2. First stage cylinder and piston, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect all parts for obvious indications of damage, such as damaged screw threads, scratched, pitted, or worn finished surfaces, and broken cooling fins.

(3) Inspect the cylinder bore, piston, piston pin, master rod, and bearings for excessive wear, scoring, and other damage.

(4) Refer to Table 5-2 for wear tolerances.

c. Reassembly.

(1) Attach first stage piston (23, fig. 7-2) to master rod and needle bearings with piston pin (22, fig. 7-2) and retaining rings (21).

(2) Install shim (25) between two paper gaskets (24), against mounting flange of first stage cylinder (19).

(3) Slip first stage cylinder (19) over installed piston and press into crankcase mounting hole. Cylinder must be installed with leading edge of cooling fins slanted toward fan end of compressor. Secure cylinder to crankcase with nuts (20), being sure to tighten with an equal torque.

(4) Use a depth micrometer or dial indicator to measure piston-head-to-valve-plate clearance. Required clearance is 0.021 to 0.026 inch (.0533 to .0660 cm). If necessary, remove cylinder and add or remove cylinder-to-crankcase gaskets to obtain required clearance.

NOTE

Overall thickness of steel gaskets can be reduced in increments of 0.002 inch (.0050 cm) by peeling off laminations. At least one paper gasket must remain on each side of steel gasket in final installation.

(5) Install packing (10) in groove in first stage cylinder head (9). Assemble valve stop (11), exhaust spring (12), exhaust valve (13), valve plate (14), intake valve (15), and intake valve spring (16). Attach assembled parts to cylinder head with screw (18), flatwasher (17), and screw (8).

(6) Position first stage cylinder head and valve assembly and gasket (17) on first stage cylinder so that cooling fins all slant in same direction. Install flat head screws (18, fig. 7-2) and tighten with a torque of 25 pound-inches (.2904 kgm).

(7) Install air intake filter (5), cover (3), and two gaskets (4) with screws (1) and lockwashers (2).

(8) Connect the intercooler assembly (fig. 7-1).

7-7. Second Stage Cylinder, Piston and Valve, Removal and Installation

a. Removal.

(1) Disconnect the intercooler assemblies at the second stage inlet and outlet ports (fig. 7-1).

(2) Loosen nut (30, fig. 7-3) and remove relief valve assembly (29).

(3) Unscrew cylinder cap (42) and remove exhaust valve (35), valve spring (36), valve spring washer (37), and preformed packing (38).

(4) If the rupture disc (41) is defective, unscrew disc holdown screw (39) and remove disc retainer ring (40) and rupture disc (41) from the cylinder cap (42).

(5) Remove nuts (33) and carefully slide cylinder (34) over the piston assembly (28).

(6) Remove and discard gaskets (22 and shim (23).

(7) Remove cotter pin (26) and carefully push piston pin (27) out of the piston assembly (28). Use care to prevent loss of the twenty-five needle bearings (24) and two washers (25) which will drop out of the piston assembly when the piston pin is removed. Scribe a small mark on the inside of the piston skirt toward the fan end of the crankcase for correct reassembly.

(8) Do not disassemble the piston assembly.

KEY to Figure 7-3.

1. Third stage disc retaining ring
2. Disc retainer
3. Rupture disc
4. Third stage cylinder cap
5. Exhaust valve spring
6. Exhaust valve
7. Elbow
8. Nut
9. Preformed packing
10. Gasket
11. Third stage cylinder and sleeve
12. Nut
13. Seal
14. Reducer bushing
15. Bearing
16. Washer
17. Cotter pin
18. Piston pin
19. Piston assembly
20. Gasket
21. Gasket
22. Gasket
23. Shim
24. Bearing
25. Washer
26. Cotter pin
27. Piston pin
28. Piston assembly
29. Relief valve assembly
30. Nut
31. Preformed packing
32. Seal
33. Nut
34. Second stage cylinder
35. Second stage exhaust valve
36. Valve spring
37. Valve spring washer
38. Preformed packing
39. Disc holddown screw
40. Disc retainer ring
41. Rupture disc
42. Cylinder cap

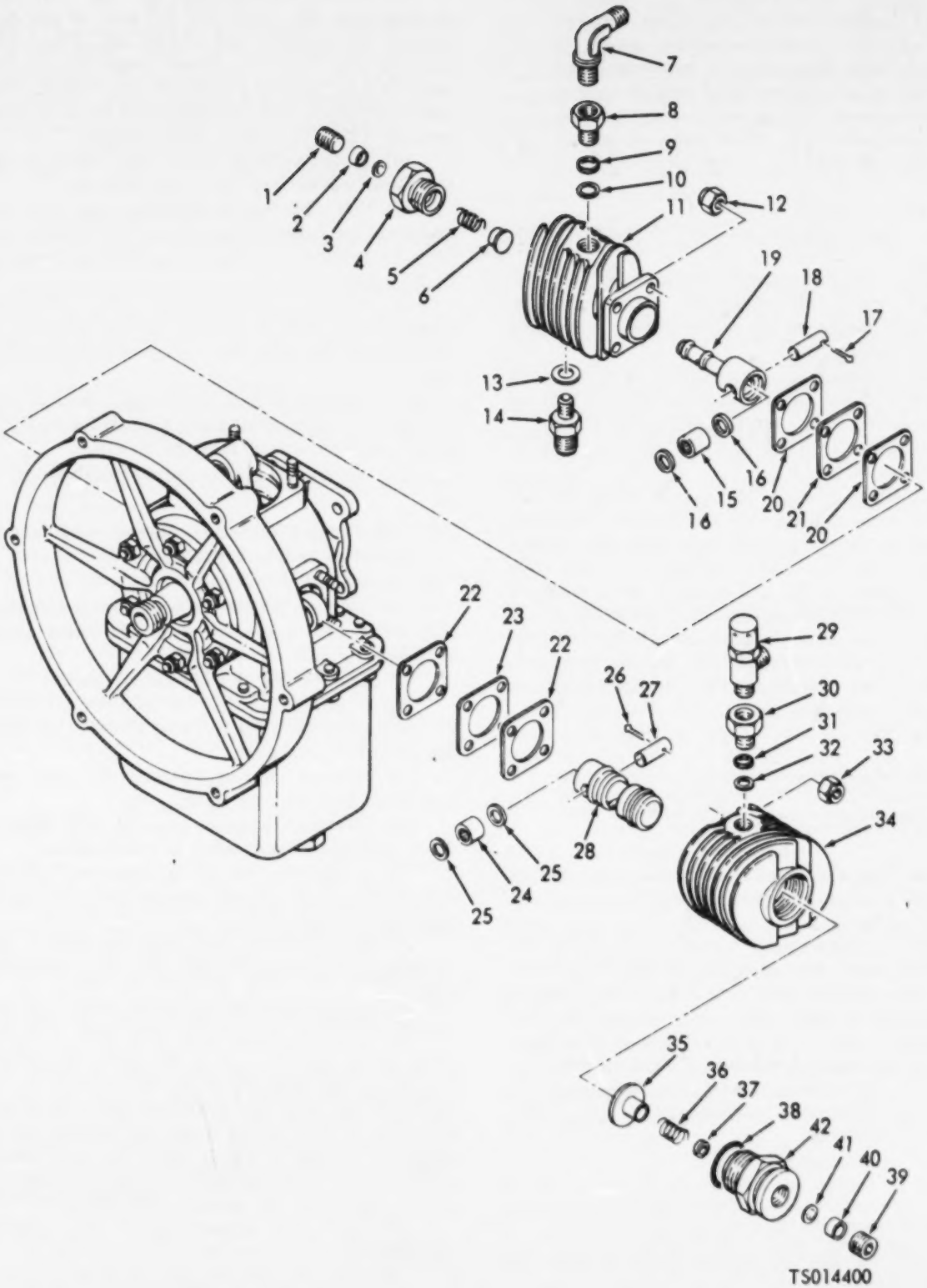

Figure 7-3. Second and third stage cylinders and pistons, removal and installation.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect all parts for obvious indication of damage, such as damaged screw threads, scratched, pitted or worn finished surfaces, and broken cooling fins.

(3) Inspect the cylinder bore, piston assembly, piston pin, connecting link and bearing for excessive wear, scoring and other damage.

(4) Refer to Table 5-2 for wear tolerances.

c. Reassembly.

(1) Place twenty-five needle bearings (24, fig. 7-3) around the inside diameter of the piston pin hole in the connecting link. Place one washer (25) over each end of the bearings. Carefully slide piston assembly (28) and scribe a small mark on the inside of the piston skirt toward the fan end of the crankcase, over the connecting link and press piston pin (27) through the piston, washers, bearings, and connecting link. Secure the piston pin with cotter pin (26).

NOTE

Assembly of the needle bearings and washers into the connecting link can be facilitated by applying a coat of Petrolatum, Federal Specification VV-P-236.

(2) Place shims (23) between two gaskets (22) and position the gaskets onto the crankcase mounting flange.

(3) Carefully slide cylinder (34) over the piston assembly and attach to the crankcase with nuts (33). Tighten the nuts with equal torque.

(4) Use a depth micrometer or dial indicator to measure piston-head-to-valve-seat clearance. Required clearance is 0.002 to 0.006 inch (.0050 to .0152 cm). If necessary, remove cylinder and add or remove cylinder-to-crankcase gaskets to obtain required clearance.

NOTE

Overall thickness of steel gaskets can be reduced in increments of 0.002 inch (.0050 cm) by peeling off laminations. At least one paper gasket must remain on each side of steel gasket in final installation.

(5) Install rupture disc (41, fig. 7-3) into cylinder cap (42), with the red side of the disc toward the retainer end of the cap. Place disc retainer ring (40), chamfered edge toward the rupture disc, into the cylinder cap. Install disc holddown screw (39) and tighten to 60 to 90 inch-pounds (.6915 to 1.0511 kgm) torque.

(6) Install exhaust valve (35), valve spring (36), and washer (37) into the cylinder.

(7) Place preformed packing (38) into the groove in the cylinder cap. Screw the cylinder cap into the cylinder and tighten to 300 inch-pounds (3.4576 kgm) torque.

(8) Apply lubricating oil, Federal Specification MIL-L-6085A, to the threads of relief valve (29), seal (32), and preformed packing (31).

(9) Install nut (30), preformed packing (31) and seal (32) onto the relief valve and install the relief valve assembly into the cylinder.

(10) Connect the intercooler assembly (fig. 7-1).

7-8. Third Stage Cylinder, Piston, and Valve, Removal and Installation

a. Removal.

(1) Disconnect the intercooler assemblies and aftercooler assembly from the third stage cylinder (fig. 7-1).

(2) Remove the fan assembly (para 7-3).

(3) Loosen nut (8, fig. 7-3) and remove elbow (7), preformed packing (9), and gasket (10) from the cylinder inlet port.

(4) Remove reducer bushing (14) and seal (13) from the cylinder outlet port.

(5) Unscrew cylinder cap (4) and remove valve spring (5) and exhaust valve (6).

(6) If rupture disc (3) is defective unscrew disc retainer ring (1) and remove disc retainer (2) and rupture disc (3).

(7) Remove nuts (12) and carefully slide cylinder and sleeve (11) over the piston assembly (19).

(8) Remove and discard gaskets (20 and 21).

(9) Remove cotter pin (17) and carefully push piston pin (18) out of the piston assembly. Use care to prevent loss of the twenty-five needle bearings (15) and two washers (16) which will drop out of the pistor when the piston pin is removed. Scribe a small mark on the inside surface of the piston assembly toward the fan end of the crankcase for correct reassembly.

(10) Do not disassemble the piston assembly.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100 ° F. (38 ° C.) — 138 ° F. (59 ° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec. P-D-680.

(2) Inspect all parts for obvious indication of damage, such as damaged threads, scratched, pitted, or worn finished surfaces, and broken cooling fins.

(3) Inspect the cylinder bore, piston assembly, piston pin, connecting link and bearings for excessive wear, scoring and other damage.

(4) Refer to Table 5-2 for wear tolerances.

c. Reassembly.

(1) Place twenty-five needle bearings (15, fig. 7-3) around the inside diameter of the piston pin hole in the connecting link. Place one washer (16) over each end of the bearings. Carefully slide piston assembly (19), and scribe a small mark on the inside surface of the piston assembly toward the fan end of the crankcase, over the connecting link and press piston pin (18) through the piston, washers, bearings, and connecting link. Secure the piston pin with cotter pin (17).

NOTE

Assembly of the needle bearings and washers into the connecting link can be facilitated by applying a coat of Petrolatum, Federal Specification VV-P-236.

(2) Place gasket (21, fig. 7-3) between two gaskets (20) and position the gaskets onto the crankcase mounting flange.

(3) Carefully slide cylinder and sleeve (11) over the piston assembly and attach to the crankcase with nuts (12). Tighten the nuts with equal torque.

(4) Use a depth micrometer or dial indicator to measure piston-head-to-valve-seat clearance. Required clearance is 0.002 to 0.006 inch (.0050 to .0152 cm). If necessary, remove cylinder and add or remove cylinder-to-crankcase gaskets to obtain required clearance.

NOTE

Overall thickness of steel gaskets can be reduced in increments of 0.002 inch (.0050 cm) by peeling off laminations. At least one paper gasket must remain on each side of steel gasket in final installation.

(5) Install rupture disc (3) into cylinder cap (4) with the red side of the disc toward the retainer end of the cap. Place disc retainer (3), chamfered edge toward the rupture disc, into the cylinder cap. Install disc retainer ring (1) and tighten to 60 to 90 inch-pounds (.6915 to 1.0511 kgm) torque.

(6) Install exhaust valve (6) and valve spring (5) into the cylinder.

(7) Screw the cylinder cap (4) into the cylinder and tighten to 300 inch-pounds (3.4851 kgm) torque.

(8) Apply lubricating oil, Federal Specification MIL-L-6085A, to the threads of reducer bushing (14), elbow (7), seal (13), gasket (10, fig. 7-3), nut (8) and preformed packing (9).

(9) Install nut (8), preformed packing (9) and gasket (10) onto the elbow and install the elbow assembly into the cylinder.

(10) Install seal (13) onto reducer (14) and screw the reducer into the cylinder.

(11) Connect the intercooler assemblies (fig. 7-1).

(12) Connect the aftercooler assembly (fig. 7-1).

7-9. Crankcase Assembly, Disassembly and Reassembly

a. Disassembly.

(1) Remove the fan assembly (para 7-3).

(2) Remove drain plug (24, fig. 7-4) and preformed packing (23). Allow all lubricant to drain from oil reservoir (25).

(3) Unscrew and remove sight gage (27) and preformed packing (26).

(4) Remove six nuts (36), endbell (35) and gasket (39) from the crankcase.

(5) Remove the sems fasteners (22) and pull oil reservoir (25) from the crankcase. The oil pump piston will slide out of the pump cylinder.

(6) Remove screws (19), oil pump cylinder (18), and cylinder retainer (20) from the oil reservoir.

(7) Remove pin (21) and separate the cylinder from the retainer.

(8) Unscrew piston retainer (17) from the master connecting rod assembly. Remove shim (16), piston (15), ball (14), rod socket (13), and ball retainer (12).

(9) Remove the first stage piston, second stage piston, and third stage piston (refer to paras 7-6, 7-7 and 7-8).

(10) Pull crankshaft (42, fig. 7-4), oil seal (40), and bearing (41) out of the crankcase (1).

(11) Remove thrust washer (43), bearing (47), and oil seal (48) from the crankcase (1).

(12) Remove cotter pins (3) and push the piston pin (4) out of the master connecting rod. Remove connecting link (31), using care to prevent loss of the twenty-five needle bearings (32) and two washers (5 and 33).

(13) Remove cotter pin (6) and push piston pin (7) out of the master connecting rod, using care to prevent loss of the twenty-five needle bearings (9) and washers (8 and 11). Remove connecting link (10).

(14) Pull bearings (30) from the master connecting rod.

(15) Push bearing (34) out of the master connecting rod.

KEY to Figure 7-4.

1. Crankcase
2. Stud
3. Cotter pin
4. Piston pin
5. Bearing washer
6. Cotter pin
7. Piston pin
8. Bearing washer
9. Bearing
10. Second stage connecting link
11. Bearing washer
12. Ball retainer
13. Rod socket
14. Ball
15. Oil pump piston assembly
16. Shim
17. Retainer
18. Cylinder
19. Screw
20. Retainer
21. Pin
22. Sems fastener
23. Preformed packing
24. Drain plug
25. Oil reservoir
26. Preformed packing
27. Oil level sight gage
28. Gasket
29. Master connecting rod
30. Bearing
31. Third stage connecting link
32. Bearing
33. Bearing washer
34. Bearing
35. Endbell
36. Nut
37. Identification plate
38. Drive screw
39. Gasket
40. Oil seal
41. Bearing
42. Crankshaft
43. Thrust washer
44. Drive bushing
45. Retaining plate
46. Locating pin
47. Bearing
48. Oil seal

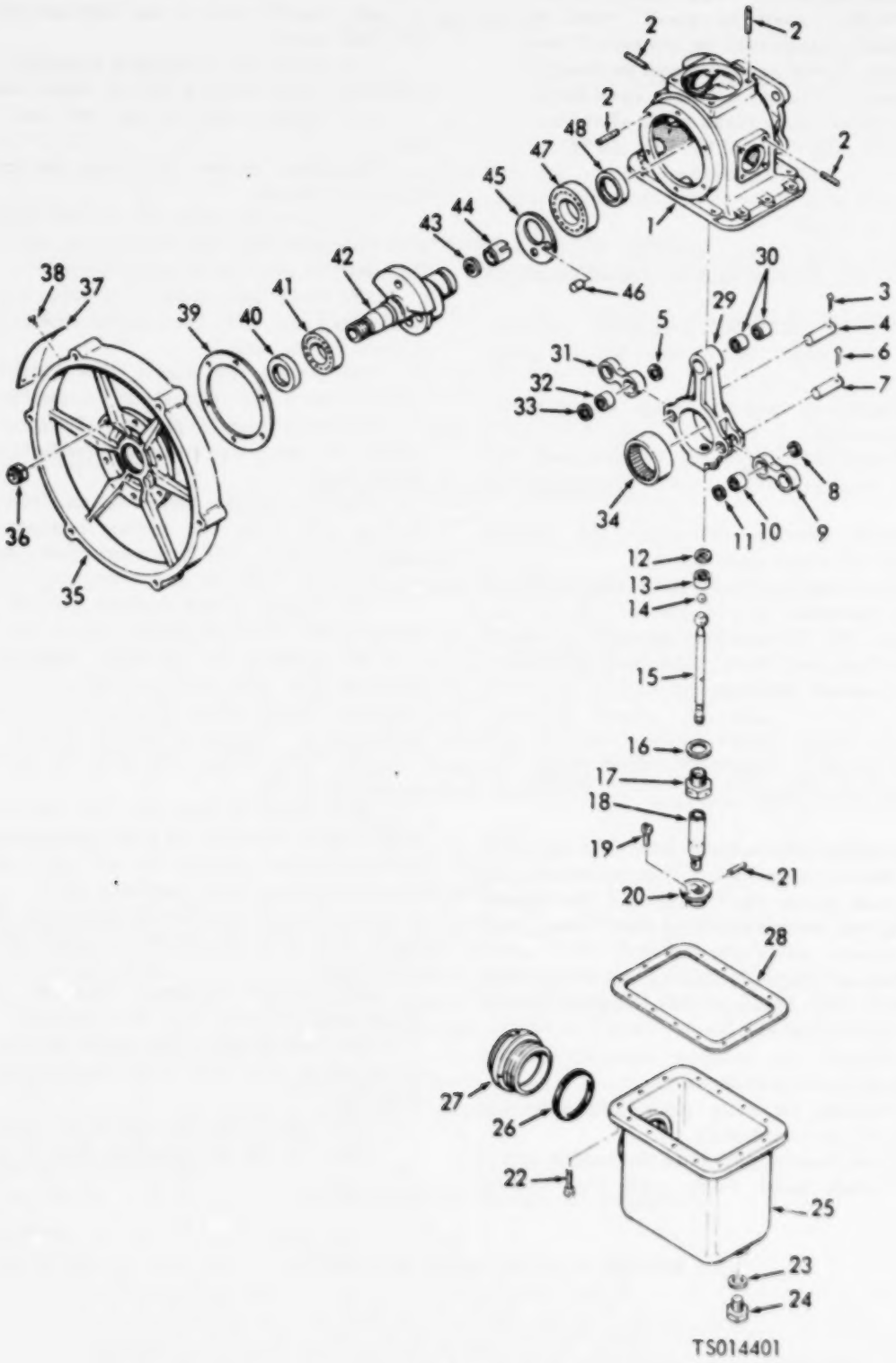

Figure 7-4. Crankcase assembly, disassembly and reassembly.

WARNING

Dry cleaning solvent, Fed. Spec. P-D-680 or P-S-661, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100° F. (38° C.) — 138° F. (59° C.).

b. Cleaning and Inspection.

(1) Clean all parts with dry cleaning solvent, Fed. Spec P-D-680.

(2) Dry with clean, lint-free cloths and compressed air. Ensure that all drilled passages are clean.

(3) Inspect parts for scratches, scoring, corrosion and wear. See Table 5-2 for wear tolerances.

(4) Replace all bearings, seals, and gaskets.

c. Reassembly.

(1) Press bearings (30, fig. 7-4) into each side of the first stage link of the master connecting rod (29).

(2) Press bearing (34) into the master connecting rod crankshaft journal.

(3) Place twenty-five needle bearings around the inside diameter of the piston hole in connecting link (10). Place washer (8) against one end of the bearings and washer (11) against the opposite end of the bearings.

NOTE

Installation of the bearings and washers can be facilitated by apply a coat of Petrolatum, Federal Specification VV-P-236, to the parts.

(4) Position connecting link (10, fig. 7-4) between the two arms on the master connecting rod and push piston pin (7) through the master connecting rod and connecting link. Secure the piston pin with cotter pin (6).

(5) Repeat steps (3) and (4) to install connecting link (31), bearings (32), washers (5 and 33), and cotter pin (3).

(6) Install the master connecting rod assembly onto crankshaft (42).

(7) Position retaining plate (45) onto the drive end of the crankshaft.

(8) Press bearing (47) onto the engine end of the crankshaft until flush with the bearing shoulder.

(9) Press bearing (41) onto the endbell end of the crankshaft until firmly seated.

(10) Install a new oil seal (48) into the crankcase seal recess.

(11) Install the crankshaft assembly into the crankcase until bearing (47) is firmly seated.

(12) Press a new oil seal (40) into endbell (35).

(13) Place gasket (39) onto the crankcase mounting flange.

(14) Carefullly slide the endbell and oil seal over the crankshaft and attach with six nuts (36). Tighten the nuts with equal torque.

(15) Place ball retainer (12) into the master connecting rod, with the cupped side toward the outside of the rod.

(16) Install rod socket (13) over the ball retainer, with the cupped side outward.

(17) Slide piston retainer (17, fig. 7-4) onto piston (15), with the retainer threads toward the piston ball.

(18) Attach the piston to the master connecting rod with the piston retainer. Install sufficient shims (16) to ensure that the piston moves freely with no end play.

(19) Attach pump cylinder (18) to cylinder retainer (20) with pin (21).

(20) Attach the cylinder retainer to oil reservoir (25) with screws (19).

(21) Install safety wire to the piston retainer and cylinder retainer attaching screws.

(22) Place gasket (28) onto the oil reservoir mounting flange.

(23) Install oil reservoir (25) onto the crankcase while guiding the oil pump piston into the oil pump cylinder. Attach the oil reservoir to the crankcase with sems fasteners (22).

(24) Install preformed packing (26) onto sight gage (27) and screw the gage into the oil reservoir.

(25) Install preformed packing (23) and drain plug (24) into the oil reservoir.

(26) Install the first stage piston, second stage piston, and third stage piston (para 7-6, 7-7 and 7-8).

(27) Install the fan assembly (para 7-3).

(28) Fill the oil reservoir (fig. 3-1).

APPENDIX A

REFERENCES

A-1. Fire Protection

TB 5-4200-200-10	Hand Portable Fire Extinguishers for Army Users.

A-2. Lubrication

C9100IL	Fuels, Lubricants, Oils and Waxes.
LO 5-4310-275-12	Compressor, Reciprocating, Stewart-Warner Model 43040-301-01.
LO 5-2805-257-14	Engine Gasoline, 3 HP, Military Standard Model 2A016-III.
MIL-G-4343	Grease, Pneumatic System.

A-3. Painting

TM 43-0139	Painting Instruction for Field Use

A-4. Radio Suppression

TM 11-483	Radio Interference Suppression.

A-5. Maintenance

P-D-680	Dry Cleaning Solvent.
TB 742-93-1	Inspection and Test of Air and Other Gas Compressors.
TM 9-2610-200-20, 34	Care and Maintenance of Pneumatic Tires.
TM 38-750	Army Equipment Record Procedure.
TM 5-2805-257-14	Operator, Organizational, Direct Support and General Support Maintenance Manual: Engine, Gasoline, 3 HP, Military Standard Models (Model 2A016-1, NSN 2805-00-601-5127) (Model 2A016-2, NSN 2805-00-714-8553) (Model 2A016-3, NSN 2805-00-072-4871). (TO 38G2-103-2; TM-03521A-14) Change 2.
TM 5-2805-257-24P	Organizational, Direct and General Support Maintenance Repair Parts List: Engine, Gasoline, 3 HP, Military Standard Models (Models 2A016-1, 2A016-2 and 2A016-3).
TM 5-4300-280-ESC	Equipment Serviceability Criteria for Compressor, Reciprocating, Air, Power Driven, High Pressure.
TM 5-4310-275-25P	Organizational, Direct Support, General Support, and Depot Maintenance Repair Parts and Special Tools List, Compressor Reciprocating, Stewart-Warner Model 43040-301-01.

A-6. Destruction of Equipment

TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command).

A-7. Shipment and Storage

TM 740-90-1	Administrative Storage of Equipment.

A-8. Operation

TB MED 251	Noise and Conservation of Hearing.

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. General

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component and the work measurement time required to perform the functions by the designated maintenance level. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III lists the tools and test equipment required for each maintenance function as referenced from Section II.

B-2. Explanation of Columns in Section II

a. Column 1. Group Number. Column 1 lists group numbers to identify related components, assemblies, sub-assemblies, and modules with their next higher assembly. The applicable groups are listed in the MAC in disassembly sequence beginning with the first group removed.

b. Column 2. Component/Assembly. This column contains the noun names of components, assemblies, sub-assemblies and modules for which maintenance is authorized.

c. Column 3. Maintenance Functions. This column lists the functions to be performed on the item listed in Column 2. The maintenance functions are defined as follows:

(1) Inspect. To determine serviceability of an item by comparing its physical, mechanical, and/ or electrical characteristics with established standards through examination.

(2) Test. To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

(3) Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminated), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

(4) Adjust. To maintain within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

(5) Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

(6) Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

(7) Install. The act of emplacing, seating, or fixing into position an item, part or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

(8) Replace. The act of substituting a serviceable like type part, sub-assembly, or module (component or assembly) for an unserviceable counterpart.

(9) Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, sub-assembly, module (component or assembly), end item, or system.

(10) Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.

(11) Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing

standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

d. Column 4. Maintenance Category. This column is made up of sub-columns for each category of maintenance. Work time figures are listed in these sub-columns for the lowest level of maintenance authorized to perform the function listed in Column 3. These figures indicate the average active time required to perform the maintenance function at the indicated category of maintenance under typical field operating conditions.

e. Column 5. Tools and Equipment. This column is provided for referencing by code, the common tool sets (not individual tools) special tools, test and support equipment required to perform the designated function.

B-3. Explanation of Columns in Section III

a. Column (1) Reference Code. This column consists of an Arabic number listed in sequence from Column 5 of Section II. The number references the common tool sets, special tools and test equipment requirements.

b. Column (2) Maintenance Category. This column shows the lowest category of maintenance authorized to use the special tools or test equipment.

c. Column (3) Nomenclature. This column lists the name or identification of the common tool sets, special tools or test equipment.

d. Column (4) National/Nato Stock No. (NSN). This column is provided for the NSN of common tool sets, special tools and test equipment listed in the nomenclature column.

e. Column (5) Tool Number. This column lists the manufacturer's code and part number of tools and test equipment.

Section II. MAINTENANCE ALLOCATION CHART

(1)	(2)	(3)	(4)					(5)
Group number	Component / assembly	Maintenance function	Maintenance category					Tools and equipment
			C	O	F	H	D	
01	ENGINE ASSEMBLY							
	Engine Assembly	Inspect	0.3					
		Test		1.0				
		Service	0.3					
		Replace			3.0			
		Repair		1.5				
		Overhaul				10.0		
	(Refer to TM 5-2805-257-14 for crankcase through manifolds).							
02	FUEL SYSTEM AND COMPONENTS (Refer to TM 5-2805-257-14).							
	Tanks, Lines, Fittings, Line Assemblies, Fuel Tank	Service	0.2					
		Replace		1.0				
		Repair		1.0				
03	ELECTRICAL SYSTEM (Refer to TM 5-2805-257-14)							
	Instrument Panel	Inspect	0.2					
		Replace		3.0				
04	REAR AXLE							
	Rear Axle Assembly	Replace		2.0				
		Repair		1.0				
05	BRAKES							
	Rods, Shafts, Springs, Pedal	Inspect		0.2				
		Adjust		0.3				
		Replace		0.5				
06	WHEELS							
	Wheel Assembly	Service	0.3					
		Replace		0.5				
		Repair		1.0				

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* * INDICATES WT / MH REQUIRED

Section II. MAINTENANCE ALLOCATION CHART

(1) Group number	(2) Component assembly	(3) Maintenance function	(4) Maintenance category C	O	F	H	D	(5) Tools and equipment
	Tires, Tubes	Service	0.2					
		Replace		1.0				
		Repair		1.0				
07	FRAME							
	Frame Assembly	Inspect		0.5				
		Replace			10.5			
		Repair			2.0			
	Pintle and Towing Attachments	Service	0.2					
		Replace		0.5				
	Support Stand	Replace		0.5				
		Repair			1.0			
08	BODY, CAB, HOOD AND HULL							
	Door Assemblies, Hood, Housing Panels and Sill Assemblies	Replace		1.0				
		Repair			1.0			
09	BODY CHASSIS OR HULL AND ACCESSORY ITEMS							
	Accessory Items	Inspect		0.2				
		Replace		0.3				
10	DATA PLATES							
	Plates, Identification, Instruction	Inspect		0.1				
		Replace		0.3				
11	GAGES (NON-ELECTRICAL)							
	Gages, Lines and Fittings	Inspect		0.2				
		Replace		1.0				
12	PNEUMATIC EQUIPMENT							
	Air Compressor Assembly	Service	1.0					
		Replace			3.0			
		Repair			2.0			
		Overhaul					20.0	
	Crankcase	Inspect				0.3		
		Replace				5.0		
	Cylinders (ea)	Inspect				0.3		
		Replace				1.5		
	Head (ea)	Inspect			0.2			
		Replace			1.0			
	Crankshaft	Inspect				0.2		
		Replace				2.0		
	Pistons, Connecting Rod	Inspect				0.2		
		Replace				1.0		
	Valves	Inspect			0.2			
		Replace			1.0			
		Repair			1.0			
	Plate Assembly, Oil Pump	Inspect			0.2			
		Replace			1.0			
	Cover and Filter Assembly	Service		0.3				
		Replace		0.5				
	Oil Pump	Replace				0.5		
		Repair				1.5		
	Compressor Drive Assembly	Inspect			0.2			
		Replace			1.0			
	Cleaner Assembly, Air	Service	0.2					
		Replace		0.2				
	Filter Assembly, Hydraulic	Service		0.2				
		Replace		0.3				
	Dehydrator Unit and Valves	Replace		1.0				
		Repair			2.0			

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* * INDICATES WT / MH REQUIRED

Section II. MAINTENANCE ALLOCATION CHART

(1) Group number	(2) Component / assembly	(3) Maintenance function	(4) Maintenance category C	O	F	H	D	(5) Tools and equipment
	Chamber Assemblies, Condensation; Desiccant container	Inspect		0.2				
		Service	0.3					
		Replace		0.5				
	Valves: Pressure Regulating	Inspect		0.2				
		Replace		0.5				
	Line Assemblies	Inspect		0.2				
		Replace		0.3				
	Valves: Pressure Relief, Check, Dump Back Pressure	Replace		0.5				
		Repair			2.0			
	Compressor, Cooling and Heating							
	Fan	Inspect		0.2				
		Replace			1.0			
	Blanket, Heater	Inspect			0.2			
		Replace			1.5			
	Intercooler-Aftercooler	Inspect		0.3				
		Replace			1.5			
	Air Receiver Tank, Pressure	Inspect		0.2				
		Test			0.2			
		Replace			1.0			
	Cushion	Inspect		0.1				
		Replace			0.5			
	Safety Head: Valve Assembly	Inspect		0.1				
		Replace		0.4				
	Line Assembly	Inspect		0.1				
		Replace		0.3				
	Air Discharge System (Line Assemblies)	Inspect		0.1				
		Replace		0.3				
13	FIRE FIGHTING EQUIPMENT COMPONENTS							
	Fire extinguisher	Service		0.1				
		Replace		0.2				

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* * INDICATES WT / MH REQUIRED

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

Reference Code	Maintenance Category	Nomenclature	National Stock Number	Tool Number
		No special tools or test equipment required.		

Section IV. MAINTENANCE ALLOCATION CHART

Reference code	Remarks
	Ref TB 742-93-1 for gages, lines, and fittings. Frame (straighten welds). Ref TB 742-93-1 for valves: pressure relief, check, dump back pressure. Ref TB 742-93-1 for pressure tank (air receiver).

APPENDIX C

BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST

Section I. INTRODUCTION

C-1. Scope

This appendix lists basic issue items and items troop installed or authorized of the compressor.

C-2. General

This Basic Issue Items and Items Troop Installed or Authorized is divided into the following sections:

a. Section II. Basic Issue Items List. A list, in alphabetical sequence, of items which are furnished with and which must be turned in with the end item.

b. Section III. Items Troop Installed or Authorized List. A list, in alphabetical sequence, of items which, at the discretion of the unit commander, may accompany the end item, but should not be turned in with the end item.

C-3. Explanation of Columns

The following provides an explanation of columns found in the tabular listings:

a. Source Maintenance and Recoverability Codes (SMR).

(1) Source Code. Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	*Definition*
PA	Item procured and stocked for anticipated or known usage.
PB	Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply systems.
PC	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfittings. Not subject to automatic replenishment.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	Support equipmnet which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the item of overhaul or repair.
KA	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at the direct support maintenance level.
MH	Item to be manufactured or fabricated at the general support maintenance level.
MD	Item to be manufactured or fabricated at the depot maintenance level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at direct support maintenance level.
AH	Item to be assembled at general support maintenance level.
AD	Item to be assembled at depot maintenance level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Item is not procured or stocked. If not available through salvage, requisition.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA, XD, and aircraft support items as restricted by AR 700-42.

(2) Maintenance Code. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and Repair support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	*Application/Explanation*
C	Crew or operator maintenance performed within organizational maintenance.
O	Support item is removed, replaced, used at the organizational level.
I	Support item is removed, replaced, used by the direct support element of integrated direct support maintenance.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.
D	Support items that are removed, replaced, used at depot, mobile depot, specialized repair activity only.

NOTE

Codes "I" and "F" will be considered the same by direct support units.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	*Application/Explanation*
O	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.
H	The lowest maintenance level capable of complete repair of the support item is the general support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level, performed by depot, mobile depot or specialized repair activity.
L	Repair restricted to designated specialized repair activity.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(3) Recoverability Code. Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Codes	*Definition*
Z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.
O	Reparable item. When uneconomically reparable, condemn and dispose at organizational level.
F	Reparable item. When uneconomically reparable, condemn and dispose at the direct support level.
H	Reparable item. When uneconomically reparable, condemn and dispose at the general support level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Reparable item. Repair, condemnation, and disposal not authorized below depot/specialized repair activity level.
A	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

b. National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items. For BIIL and ITIAL, see explanation of description column, para. *e.*

NOTE

When a stock numbered item is requisitioned, the repair part received may have a different part number than the part being replaced.

d. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc. For BIIL and ITIAL, see explanation of description column, para. *e.*

e. Description. Indicates the Federal item name and, if required, a minimum description to identify the item. (In BIIL and ITIAL only, the following will be used: "The last line for each item in the BIIL and ITIAL indicates the part number with the FSCM in parenthesis").

f. Unit of Measure (U/M). Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

g. Quantity Furnished with Equipment. (Basic Issue Items Only). Indicates the quantity of the basic issue item furnished with the equipment.

h. Quantity Authorized. (Items Troop Installed or Authorized Only.). Indicates the quantity of the item authorized to be used with the equipment.

Section II. BASIC ISSUE ITEMS LIST

(1) SMR code	(2) National Stock Number	(3) Description Ref No. & Mfr code — Usable on Code	(4) Unit of meas	(5) Qty Furn with Equip	(6) Illustration (a) Figure No.	(6) Illustration (b) Item No.
PAOZZ	7520-00-559-9618	Case, maintenance and operational manuals: cotton duck, water repellent.	EA	1		
PAOZZ		Department of the Army Operator, Organizational, Direct and General Support Maintenance Manual—TM 5-4310-275-14.	EA	1		
PAOZZ		LO 5-4310-275-12	EA	1		
PAOZZ		LO 5-2805-257-12	EA	1		
PAOZZ		TM 5-2805-257-14	EA	1		

Section III. ITEMS TROOP INSTALLED OR AUTHORIZED LIST

(1) SMR Code	(2) National Stock Number	(3) Description Ref No. & Mfr Code — Usable on Code	(4) Unit of Meas	(5) Qty auth
PAOZZ	4210-00-555-8837	Extinguished, fire monobromotrifluoromethane: charged; hand; penetrating seal valve; stored pressure; s/bracket; 2.75 lb.; MILSPEC E-52031.	EA	1

INDEX

	Paragraph	Page
A		
Administrative Storage	1-5	1-6
Aftercooler Assembly:		
Cleaning and Inspection	7-2*b*	7-2
Installation	7-2*c*	7-3
Removal	7-2*a*	7-1
Air Compressor	7-5	7-3
Air Compressor Assembly Service	3-12	3-9
Air Compressor Removal and Installation:		
Compressor Run-In	5-11*d*	5-8
Installation	5-11*b*	5-8
Removal	5-11*a*	5-6
Testing the Air Compressor	5-11*c*	5-8
Air Discharge Hose Assembly Replacement:		
Cleaning and Inspection	4-27*c*	4-12
Removal	4-27*a*	4-12
Air Line Filter Assembly and Back Pressure Valve Removal and Installation:		
Cleaning and Inspection	4-29*b*	4-13
Removal	4-29*a*	4-13
Air Line Filter Service	3-14	3-13
Air Lines and Fittings, Removal and Installation:		
Cleaning and Inspection	4-34*b*	4-20
Removal	4-34*a*	4-17
Air Pressure Tank Removal and Installation:		
Installation	5-10*b*	5-6
Removal	5-10*a*	5-4
Air Pressure Tank Safety Head Assembly and Pressure Relief Valve, Removal and Installation:		
Cleaning and Inspection	4-28*b*	4-13
Removal	4-28*a*	4-13
Air System	3-13	3-11
Axle Assembly, Removal and Installation:		
Cleaning and Inspection	4-25*b*	4-11
Installation	4-25*d*	4-11
Removal	4-25*a*	4-11
Axles, Brakes, and Wheels, General	4-21	4-9
B		
Back Pressure Valve, Repair:		
Cleaning and Inspection	6-4*d*	6-6
Disassembly	6-4*c*	6-5
General	6-4*a*	6-5
Reassembly	6-4*e*	6-7
Test and Adjustment	6-4*f*	6-7
Body and Frame, General	4-35	4-20
Brake Assembly, Removal and Installation:		
Cleaning and Inspection	4-24*b*	4-11
Installation	4-24*d*	4-11
Removal	4-24*a*	4-11
C		
Check Valve, Repair:		
Cleaning and Inspection	6-3*d*	6-4
General	6-3*a*	6-3
Reassembly	6-3*e*	6-4
Removal	6-3*b*	6-4
Test	6-3*f*	6-4
Compressor Components, General	7-1	7-1
Controls and Instruments	2-2	2-1
Crankcase Assembly, Disassembly and Reassembly:		
Cleaning and Inspection	7-9*b*	7-12
Disassembly	7-9*a*	7-9
Reassembly	7-9*c*	7-12
D		
Definitions	4-12	4-4
Dehydrator Assembly and Desiccant Container Removal and Installation:		
Cleaning and Inspection	4-30*b*	4-14
Installation	4-30*c*	4-14
Removal	4-30*a*	4-13
Dehydrator Service	3-10	3-8
Dehydrator Unit, Repair:		
Cleaning and Inspection	6-6*d*	6-10
Disassembly	6-6*c*	6-8
General	6-6*a*	6-8
Testing	6-6*f*	6-10
Description	1-6	1-6
Destruction of Army Materiel to Prevent Enemy Use	1-4	1-6
Detailed Lubrication Information	3-2	3-4
Differences in Models	1-8	1-11
Direct Support and General Support Maintenance Troubleshooting	5-5	5-1
Dismantling for Movement	4-4	4-2
E		
Engine Assembly, Removal and Installation:		
Installation	5-12*b*	5-11
Removal	5-12*a*	5-8
Engine Service	3-8	3-7
Exhaust Pipe, Removal and Installation:		
Cleaning and Inspection	4-20*b*	4-9
Removal	4-20*a*	4-7
F		
Fan Assembly:		
Cleaning and Inspection	7-3*b*	7-3
Installation	7-3*c*	7-3
Removal	7-3*a*	7-3
Filter and Separator Assembly and Dump Valve, Repair:		
Cleaning and Inspection	6-7*d*	6-12
Disassembly	6-7*c*	6-10
General	6-7*a*	6-10
Reassembly	6-7*e*	6-12
Testing	6-7*f*	6-12
Filtering Assemblies, General	6-5	6-8

	Paragraph	Page
First Stage Cylinder, Pistons and Valves:		
Cleaning and Inspection	7-6*b*	7-6
Reassembly	7-6*c*	7-6
Removal	7-6*a*	7-3
Fuel Line Assemblies:		
Cleaning and Inspection	4-18*b*	4-7
Removal	4-18*a*	4-5
Fuel System Service	3-9	3-7
Fuel Tank Removal and Installation:		
Cleaning and Inspection	4-19*b*	4-7
Removal	4-19	4-7
G		
General Lubrication Information	3-1	3-1
General Maintenance	5-6	5-3
General Methods Used to Attain Proper Suppression	4-13	4-4
H		
Housing Sections, Removal and Installation:		
Cleaning and Inspection	4-38*b*	4-24
Installation	4-38*c*	4-24
Removal	4-38*a*	4-22
Housing Sections, Repair:		
Cleaning and Inspection	5-9*b*	5-3
Installation	5-9*d*	5-4
Removal	5-9*a*	5-3
Repair	5-9*c*	5-4
I		
Identification and Tabulated Data:		
Identification:		
Compressor package plate	1-7*a* (2)	1-7
Engine Plate	1-7*a* (1)	1-7
Tabulated Data:		
Air Hose and Chuck Assembly	1-7*b* (15)	1-8
Air Receiver	1-7*b* (12)	1-8
Back Presure Valve Assembly	1-7*b* (8)	1-8
Basic Compressor Assembly	1-7*b* (2)	1-8
Check Valve Assembly	1-7*b* (9)	1-8
Compressor, Reciprocating, Power Driven, Wheel Mounted	1-7*b* (1)	1-7
Dehydrator Assembly	1-7*b* (10)	1-8
Filter and Separator Assembly	1-7*b* (5)	1-8
Fuel Tank Assembly	1-7*b* (4)	1-8
Gasoline Engine and Engine Accessories	1-7*b* ((3)	1-8
Line Filter	1-7*b* (11)	1-8
Nut and Bolt Torque Data	1-7*b* (16)	1-9
Pneumatic Dump Valve Assembly	1-7*b* (6)	1-8
Pneumatic Schematic	1-7*b* (17)	1-9
Pressure Regulator	1-7*b* (13)	1-8
Pressure Relief Valve Assembly	1-7*b* (7)	1-8
Push Valve	1-7*b* (14)	1-8
Wiring Diagram	1-7*b* (18)	1-11
Inspection and Servicing Equipment	4-2	4-1
Installation and Setting Up Instructions	4-3	4-1
Instrument Panel Gages, Valves and Fittings, Removal and Installation:		
Cleaning and Inspection	4-33*b*	4-17
Installation	4-33*c*	4-17
Removal	4-33*a*	4-15
Intercooler Assembly:		
Cleaning and Inspection	7-4*b*	7-3
Removal	7-4*a*	7-3
Interference Suppression Components	4-14	4-5
M		
Maintenance	2-6	2-10
Maintenance Forms and Records	1-2	1-6
Maintenance of Engine and Fuel System, General	4-17	4-5
Maintenance Procedures, General	3-7	3-7
Maintenance Repair Parts	4-8,5-3	4-2,5-1
O		
Operating Procedures, General	2-1	2-1
Operation	2-5	2-10
Operation in Dusty of Sandy Areas:		
Electrical System	2-9*d*	2-10
Engine Cooling Fins and Air Shrouds	2-9*e*	2-10
Fuel Systems	2-9*c*	2-10
General	2-9*a*	2-10
Lubrication	2-9*b*	2-10
Operation in Extreme Cold:		
Electrical System	2-7*c*	2-10
Fuel System	2-7*b*	2-10
Lubrication	2-7*a*	2-10
Operation in Extreme Heat:		
Engine Cooling Fins and Air Shrouds	2-8*c*	2-10
Fuel System	2-8*b*	2-10
Lubrication	2-8*a*	2-10
Operation in Salt Water Areas:		
Electrical System	2-11*d*	2-11
Fuel Systems	2-11*c*	2-11
General	2-11*a*	2-11
Lubrication	2-11*b*	2-11
Operation of Auxiliary Equipment, General	2-4	2-10
Operation Under Normal Conditions:		
General	2-3*a*	2-4
Starting	2-3*b*	2-4
Stopping	2-3*c*	2-7
Operation Under Rainy or Humid Conditions:		
Electrical Systems	2-10*d*	2-11
Fuel System	2-10*c*	2-11
General	2-10*a*	2-11
Lubrication	2-10*b*	2-11
Operator Maintenance Troubleshooting	3-6	3-7
Organizational Maintenance Troubleshooting	4-11	4-3
P		
Pneumatic Equipment, General	4-26	4-12
Pressure Relief Valve, Check Valve and Back Pressure Valve Removal and Installation:		
Cleaning and Inspection	4-31*b*	4-14
Removal	4-31*a*	4-14
Pressure Relief Valve, Repair:		
Cleaning and Inspection	6-2*d*	6-2
Disassembly	6-2*c*	6-1
General	6-2*a*	6-1
Reassembly	6-2*e*	6-2
Test and Adjustment	6-2*f*	6-3
Preventive Maintenance checks and Services:		
General	3-3,4-9	3-4,4-2
Preventive Maintenance Services	3-4	3-6

	Paragraph	Page
R		
Reinstallation After Movement	4-5	4-2
Removal and Installation of Major Components and assemblies, General	5-8	5-3
Repair and Replacement Standards	5-7	5-3
Replacement of Suppression Components	4-15	4-5
Reporting of Errors	1-3	1-6
S		
Scope	1-1	1-1
Second stage cylinder, Piston and Valve, Removal and Installation:		
Cleaning and Inspection	7-7*b*	7-8
Reassembly	7-7*c*	7-8
Removal	7-7*a*	7-6
Separator and Filter Assembly and Dump Valve, Removal and Installation:		
Cleaning and Inspection	4-32*b*	4-15
Installation	4-32*c*	4-15
Removal	4-32*a*	4-15
Special Tools and Equipment	4-7	4-2
	5-2	5-1
Support Stand Assembly Repair:		
Removal	5-13*a*	5-11
Repair	5-13*b*	5-12
Support Stand Removal and Installation:		
Cleaning and Inspection	4-37*b*	4-22
Removal	4-37*a*	4-22
T		
Testing of Radio Interference Suppression Components	4-16	4-5
Third Stage Cylinder, Piston, and Valve, Removal and Installation:		
Cleaning and Inspection	7-8*b*	7-9
Reassembly	7-8*c*	7-9
Removal	7-8*a*	7-8
Tires and Tubes, Removal and Installation:		
Cleaning and Inspection	4-22*b*	4-11
Installation	4-22*c*	4-11
Removal	4-22*a*	4-9
Tools and Equipment	4-6	4-2
	5-1	5-1
Towing Attachment Removal and Installation:		
Cleaning and Inspection	4-36*b*	4-22
Removal	4-36*a*	4-20
Troubleshooting, General	3-5,4-10,5-4	3-7,4-3,5-1
U		
Unpacking Equipment	4-1	4-1
V		
Valve Assemblies, General	6-1	6-1
W		
Wheel Assemblies, Removal and Installation:		
Cleaning and Inspection	4-23*b*	4-11
Installation	4-23*d*	4-11
Removal	4-23*a*	4-11
Wheels, Tires, and Tubes Service	3-11	3-8

By Order of the Secretary of the Army:

FRED C. WEYAND
General, United States Army,
Chief of Staff.

Official:
VERNE L. BOWERS
Major General, United States Army,
The Adjutant General.

Distribution:

To be distributed in accordance with DA Form 12-25A, (qty rqr block no. 1)
Operator maintenance requirements for Air Compressors Under 5 CFM.

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL MANUALS

SOMETHING WRONG WITH THIS MANUAL?

THEN. . .JOT DOWN THE DOPE ABOUT IT ON THIS FORM, TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

FROM: (YOUR UNIT'S COMPLETE ADDRESS)
PFC JOHN DOE
CoA, 3d ENGINEER BN
FT. LEONARD WOOD MO 63108

DATE: 16 DEC 74

PUBLICATION NUMBER	DATE	TITLE
TM5-6115-200-20 AND P	1 APR 72	GENERATOR SET 10 KW NSN 6115-00-231-7286

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
6	2-1 a			In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders
81		4-3		Callout #6 on figure 4-3 is pointing at a bolt. In the key to fig. 4-3, item 16 is called a shim. Please correct one or the other.
125	line 20			I ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered so the NSN is wrong. Please give me a good NSN

SAMPLE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER: JOHN DOE, PFC (268) 317-7111

SIGN HERE: John Doe

TEAR ALONG DOTTED LINE

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